

# **HIV/AIDS Research Agenda Report**

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Developed by:

Mean Chhi Vun MD, MPH  
Saphonn Vonthanak, MD, MSc., PhD  
Heng Sopheab, MD, MPH  
Chhea Chorvann, MD, MPH  
Khol Vohith, MD, MSc.  
Mam Sovahta  
Hun Honkseng

With Technical Assistance from:

Nina Ingenkamp	World Health Organization Cambodia
Dr. Nicole Seguy	World Health Organization Cambodia
Dr. Carla Obermeyer	World Health Organization Geneva



## Forward

Cambodia is one of the hardest-hit countries of the HIV epidemic in South East Asia. Timely and good quality of body of knowledge would help Cambodia's response effectively to the HIV/AIDS epidemic. NCHADS is always committed to improve this evidence-based knowledge through better coordination of research activities and better dissemination of research findings.

From 28-29, March 2007, NCHADS in collaboration with WHO and other development partners organized a workshop in Phnom Penh, to establish an HIV/AIDS-related research agenda. Around 70 people from more than 30 different organizations attended the workshop.

During the workshop, research priorities were defined for the areas prevention, care & treatment and socio-economic impact of HIV/AIDS. This research agenda will be reviewed in the next two years. In the meantime, NCHADS will be responsible for maintaining the inventory of HIV/AIDS-related research studies and make it publicly accessible via the NCHADS website. NCHADS will also play a coordinating role to update and share the latest information related to different HIV/AIDS related research projects and findings in Cambodia.

Finally, I would like to thank WHO for providing technical support to this process. I strongly hope that local and international researchers who intent to conduct HIV/AIDS related research in Cambodia will make use of this research agenda as guidance to identify priorities areas of research to be undertaken to meet program needs and that its findings translate back into action.



Dr. Mean Chhi Vun  
Director, NCHADS

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## **List of Abbreviations**

ART Antiretroviral Therapy

ANC Antenatal Care

MSF-B Médecins Sans Frontieres Belgium

CENAT National Center for Tuberculosis and Leprosy Control

CHAI Clinton HIV/AIDS Initiative

CoC Continuum of Care

CPN+ Cambodian People Living with HIV/AIDS Network

EC European Commission

EW Entertainment Workers

FHI Family Health International

GTZ German Technical Co-operation

HSS HIV Sentinel Survey

KAP Knowledge, Attitudes and Practices

KAB Knowledge, Attitudes and Behaviours

KHANA Khmer HIV/AIDS NGO Alliance

MSM Men Having Sex with Men

NAA National AIDS Authority

NCHADS National Center for HIV/AIDS, Dermatology and STD's

NGO Non-Governmental Organization

NIPH National Institute of Public Health

NPH National Pediatric Hospital

OD Operational District

OVC Orphans and Other Vulnerable Children

PLHA Persons Living with HIV/AIDS

PMTCT Prevention of Mother to Child Transmission

PSI Population Service International

RACHA Reproductive and Child Health Alliance

RHAC Reproductive Health Association Cambodia

SCH-A Save the Children Australia

SHCH Sihanouk Hospital Center of Hope

STI Sexually Transmitted Infection

STD Sexually Transmitted Disease

SWOT Strengths, Weaknesses, Opportunities and Threats

TB Tuberculosis

UHS University of Health Science

UNAIDS The Joint United Nations Programme on HIV/AIDS

UNDP United Nations Development Programme

UNESCO United Nations Educational, Scientific and Cultural Organization

UNFPA United Nations Population Fund

UNICEF United Nations Children's Fund

UNIFEM United Nations Development Fund for Women

UNSW University of New South Wales

URC University Research Co.

US-CDC United States Center for Disease Control

USAID United States Agency for International Development

VCCT Voluntary Counseling and Testing

WHO World Health Organization

WFP World Food Programme

## **Executive Summary**

Cambodia is one of the hardest-hit countries of the HIV epidemic in South East Asia. Having a high donor presence, a considerable amount of research on the HIV/AIDS epidemic has been carried out. The research findings are needed to equip Cambodia's response to the HIV/AIDS epidemic with an evidence-based approach. However, the impact of the generated knowledge could be greatly improved through better coordination of research activities, better dissemination of research findings and a stronger focus on closing the most pressing knowledge gaps on the HIV epidemic in Cambodia.

NCHADS has therefore taken the initiative to establish an HIV/AIDS-related research agenda. The research agenda should enable that research undertaken meets program needs and that its findings translate back into action. Research priorities were defined for the areas prevention, care & treatment and socio-economic impact of HIV/AIDS. As it was important to establish the agenda in a participatory manner, a workshop was convened to which both researchers and implementers of programs were invited. Around 70 people from more than 30 different organizations attended the workshop.

To build upon existing knowledge, already published research studies were reviewed for the three areas. The majority of studies (143 out of 255) are on HIV/AIDS prevention. Many of these are KAB surveys and have continuously been conducted by various organizations since 1995. This makes trend analysis possible. Nearly one third of all studies (75 out of 255) are on care & treatment. Much care & treatment research is still on-going, and a good start in nearly all areas has been made. Prevalence and incidence of opportunistic infections have been particularly well covered. 15% of research studies are on the socio-economic impact of HIV/AIDS. Studies in this category also look at OVCs and

analyze Cambodia's best practice in containing the epidemic. But, there is no holistic coverage of the socio-economic impact of HIV/AIDS.

Based upon a knowledge gap analysis, the research priorities for the respective areas were defined. For prevention, it was decided on three broad research priorities: (1) To measure HIV incidence for all high risk groups, which is to be integrated into the HSS; (2) To research how behaviour change is achieved, particularly how consistent condom use in young people and discordant couples can be made possible and how PMTCT services can be made more attractive to pregnant women; and (3) to analyze how access to HIV testing and counselling and testing uptake can be improved.

For the area of care & treatment, ten rather specific research priorities were defined: (1) To monitor and evaluate adherence to ARTs over the long term; (2) to analyze how stigmatization and discrimination of health care professionals and the community impairs people from getting tested or treated, and how it can be overcome; and (3) to explore what viral load testing strategies can be recommended for a resource-poor setting such as Cambodia. Other research priorities include (4) to research the women's barriers to HIV testing and care, (5) how to sequence 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> line ARTs, and (6) to better understand the short and long term toxicities associated with the current protocol.<sup>1</sup>

Two research priorities were defined for the area of socio-economic impact. (1) To conduct a cost-effectiveness analysis, including quality of life, for people living with HIV/AIDS; and (2) to assess the impact of HIV at the household level. In addition, care & treatment research priority nr. 10 looks at the effects of poverty on access to health care services, which could also be seen as a socio-economic research issue.

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<sup>1</sup> For the last four research priorities, see p. 26ff.

The research agenda has a duration of two years, and will next be reviewed in 2009. In addition, a national HIV/AIDS research symposium will be held in 2008 to monitor the implementation of the agenda and share latest results. NCHADS will be responsible for maintaining the inventory of HIV/AIDS-related research studies and make it publicly accessible via the NCHADS website.



## **I. The Need for an HIV/AIDS Research Agenda**

Cambodia is one of the few countries that have seen a turn-around in the HIV/AIDS epidemic. Adult prevalence rates of HIV have decreased from 3% in 1997 to 1.9% in 2003.<sup>2</sup> The high level of political commitment and leadership from the Royal Government of Cambodia in responding to HIV/AIDS, together with generous financial support from various sources and a vibrant civil society response have all contributed to this turning of the tide. The success of the national HIV/AIDS program can be attributed to successful HIV prevention programs such as the 100 % condom use program, effective behavior change interventions, a rapid scale up of VCCT services and enhanced utilization of the expanding Continuum of Care (CoC) program.

While many of the results of the fight against HIV/AIDS in Cambodia are encouraging, there is still ample need for action. Every year, new people living with HIV/AIDS will need care and treatment services. New areas of concern need to be addressed, for instance the increasing transmission of HIV from husband to wife, mother to child, the spill of HIV into the rural areas and the appearance of new high risk groups such as men that have sex with men and drug users. The conventional strategy to combat the disease by focusing on risk groups needs to be complemented by approaches that address vulnerability and the long-term consequences of the epidemic in a wider range of settings and populations. In general, a better understanding of the underlying causes, dynamics and impacts of the epidemic is needed.

Being a country with a high donor presence, quite an extensive amount of research on the HIV epidemic has been carried out in Cambodia. However, the impact of the generated knowledge needs to be improved through increased

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<sup>2</sup> Data HIV Sentinel Surveillance Survey 1997 and 2003. The 2005 CDHS found a HIV prevalence rate of 0.6%. However this is based on household survey data, which as a method tends to underestimate HIV prevalence in situations where the epidemic is concentrated in high prevalence groups. National reconciliation of data from the sentinel surveillance survey and the CDHS is planned to produce consensus on estimated HIV prevalence.

coordination and a better focus on program needs. NCHADS created a research unit, that aims at: (1) identifying HIV/AIDS and STDs related research that will improve prevention and care interventions; (2) collaborating with other institutions in the development and conduct of HIV/AIDS and STDs related research and (3) at disseminating research results and encouraging their incorporation into design of interventions.<sup>3</sup> The unit is supported by a research steering committee.<sup>4</sup> To improve the above-described situation, the research unit together with the research steering committee has taken the initiative to establish a HIV/AIDS-related research agenda. The objective of the research agenda is to ensure that all research conducted on HIV/AIDS in the country contributes to Cambodia's HIV/AIDS programmes. It is important to note that the agenda does not aim at controlling research. Instead, it is meant to serve as a framework for both national and international researchers on what should be researched next. Implementing organizations can use the generated knowledge as basis for their programming and funding agencies can use the agenda as a tool to evaluate the importance of research proposals.

To establish the HIV/AIDS research agenda in a participatory manner, a workshop was organized that brought together all relevant stakeholders. They discussed the current knowledge gaps and agreed on future research priorities. To technically prepare the workshop, an inventory aiming at aggregating all HIV/AIDS related research in Cambodia was established, and several meetings of the research steering committee were held. This report aims at documenting the workshop and the agreed upon HIV/AIDS research agenda for 2007/2008.

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<sup>3</sup> See <http://www.nchads.org/research.php> for a complete listing of the research unit's terms of reference.

<sup>4</sup> The Research Steering Committee was set up to (1) define the HIV/AIDS research agenda; (2) review research protocols to be conducted in Cambodia; (3) advise the National Ethic Committee and (4) organize an annual symposium on HIV/AIDS and STI related research in Cambodia. Additionally, research sub steering committees were created on clinical research, epidemiological research and socio-behavioral research. It is composed of NCHADS and NIPH managers, UN agencies and other organizations conducting and/or supporting research.

## **II. HIV/AIDS Research Agenda and Workshop Objectives**

### **1. Overall Goal of the HIV/AIDS Research Agenda:**

In line with the Cambodian Millennium Development Goal Nr. 6, the goal of the HIV/AIDS research agenda is to contribute to decrease the spread of HIV/AIDS in Cambodia.<sup>5</sup>

### **2. Overall Objectives of the HIV/AIDS Research Agenda:**

In line with the National HIV/AIDS Strategic Plan, the objective of the research agenda is to equip the planned increase in access to and quality of HIV/AIDS prevention and care services with an evidence-based approach.<sup>6</sup> The desired outcome will support the creation of an environment where the relevant research is undertaken and research findings translate back into policy and program practices.

### **3. Workshop Objectives:**

- (i) Collect additional information on the existing HIV/AIDS research in Cambodia from different stakeholders working in this field
- (ii) Conduct a gap analysis: discussion of issues and challenges in increasing access and quality of HIV/AIDS prevention and care services
- (iii) Identify the research priorities: questions HIV/AIDS programmes want to have answered
- (iv) Define the HIV/AIDS research agenda: duration and scope
- (v) Define strategies to take the research agenda forward: monitor quality and progress of implementation

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<sup>5</sup> Royal Government of Cambodia, National Strategic Development Plan 2006 – 2010, Phnom Penh, 2006: p. 100.

<sup>6</sup> Royal Government of Cambodia, National Strategic Plan for a Comprehensive & Multisectoral Response to HIV/AIDS 2006-2010, Phnom Penh, 2005: p. 8/9.

### III. Workshop Proceedings

The HIV/AIDS research agenda workshop was convened by the National Center for HIV/AIDS, Dermatology and STD on the 28<sup>th</sup> and 29<sup>th</sup> of March 2007 at the Sunway Hotel in Phnom Penh, Cambodia. The World Health Organization provided technical assistance to the process, and the GTZ Back Up Initiative kindly funded the workshop.

More than 70 participants from 37 organizations took part in the meeting. Participants came from many different organizations, ranging from government institutions to international and national non-governmental organizations to multilateral donors.<sup>7</sup> The majority of participants were active in HIV/AIDS research themselves, but organizations implementing programmes as well as potential funders of research were present as well.

The workshop was a two-day meeting. The objective of the first day was to identify the knowledge gaps in HIV/AIDS-related research, hereby answering to workshop objective nr. ii. After the official openings, the discussions started with a presentation on the current status of the HIV/AIDS epidemic and the response to it. This was followed by a presentation on the overall process of establishing the inventory of HIV/AIDS-related research in Cambodia, which formed the basis for the knowledge gap analysis. More detailed discussions followed, which specifically reviewed the existing research in the areas of prevention, care & treatment and socio-economic impact.

After participants had been brought on the same knowledge level, they were divided into working groups. It was originally planned to have one working group each on prevention, care & treatment and socio-economic impact. About 15 to 20

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<sup>7</sup> NCHADS; NAA; WHO; CENAT; URC; MSF-B; UNIFEM; CLFD; EC; MEDICAM, UNSW; CPN+; KHANA; NPH; UNFPA; FHI; PSI; UNAIDS; US-CDC; RACHA; DFID; SCH-A; UHS; UNDP; Institute Pasteur; World Bank; UNESCO; Center of Hope; WFP; RHAC; USAID; UNICEF;

people signed up for the prevention and care & treatment working groups. However, since too little participants were interested in the socio-economic impact working group, they were asked to join one of the other groups. The two remaining groups were asked to include socio-economic impact research issues in their discussions throughout the workshop. The day continued with group discussions to identify the knowledge gaps in HIV/AIDS related research by carrying out a SWOT analysis.

The second day was used to identify the research priorities and to finalize the HIV/AIDS research agenda. Participants returned to their working groups for the morning session, and were asked to prioritize the already identified knowledge gaps according to criteria of importance, urgency and feasibility, herewith answering to workshop objective nr. iii. It is important to mention that each group was free to decide on their decision-making. The prevention group adopted a rather consensus-driven decision-making, in which all participants tried to agree whether a topic was important, urgent or feasible. The care & treatment group used a voting mechanism, in which each member of the group was asked to give up to five points for the importance, urgency and feasibility of each topic.

In the afternoon discussion, the research priorities for the areas of prevention, care & treatment and socio-economic impact were presented and discussed. When the content of the research agenda was established, the last session of the workshop was dedicated to contemplating steps forward. In a plenary discussion, participants agreed on how the research agenda will be implemented and how progress made will be monitored. This discussion answered to workshop objective nr. iv and v.

## **IV. The Content of the HIV/AIDS Research Agenda**

### ***1. Current Situation of HIV/AIDS Programs***

As the introduction has already outlined, efforts to contain the spread of HIV have been successful in the recent years. To maintain and expand the progress made, it is therefore important to design targeted interventions that meet actual needs. Hence, it is therefore of vital importance to conduct a situation analysis before defining the HIV/AIDS research priorities for the upcoming years.

Regarding prevention, the situation of EW has evolved in the last few years with a decrease in numbers of brothel based EW and a drastic increase in numbers of non-brothel based EW (beer girls, women working in Karaoke and massage parlors). Since the STI prevalence among brothel-based EW has stayed stable since 2000, NCHADS has recently strengthened the prevention program for EW, including outreach/ peer education and 100% CUP for non brothel based EW and strengthening linkages with STI clinics.

Since the early 2000s, two new high-risk groups have emerged in Cambodia: Men having sex with men (MSM) and drug user (DU). These 2 groups have a potential to create new pockets of HIV infection that can also spread to other groups. Both MSM and DU are progressively being included into the second-generation surveillance system, providing information on HIV/ STI prevalence, behaviors and access to health services. HIV/AIDS prevention services are expanding progressively for these groups, mainly implemented by NGOs and existing special STI services will soon offer services for MSM.

Voluntary Confidential Counseling and Testing (VCCT) services have expanded up to 140 sites, providing HIV testing to more than 200,000 people in 2006. HIV testing coverage however needs to increase particularly for TB patients (only 1/3 new TB cases tested in 2006), pregnant women (8 % tested in 2006) and high

risk groups, particularly MSM and DU. The Provider Initiated Testing and Counseling (PITC) policy was introduced late 2006 to improve HIV testing coverage and mechanisms for a linked response between HIV/AIDS/STI and Reproductive Health, Family Planning and antenatal services have been discussed.

With the recent shift in the gender distribution of the epidemic, it is important to ensure a strong PMTCT program to limit the number of HIV-infected children. Despite government efforts to scale PMTCT services up to 60 facilities in 39 OD in 21/24 provinces in 2006, only 8.6% of HIV-infected pregnant women received a complete course of ARV prophylaxis to reduce MTCT. Evidence is needed on the best ways to improve access and uptake to HIV testing for all pregnant women, and to ensure that all HIV-positive pregnant women are actually given PMTCT interventions.

Regarding care and treatment services, the services of the CoC have expanded up to 44 OI/ART sites in 2006 including 19 sites providing pediatric care, in 19/24 provinces. In 2006, a total of 18,344 adults and 1,787 children were on HAART and survival at 12 months was > 80%. The role of HBC teams has shifted from palliative care to ensuring linkages and referrals within the CoC. New challenges are to ensure treatment access to all population groups including high risk and hidden groups, to ensure quality of services, long term adherence to ART for all population groups in order to limit the emergence of HIV drug resistance and to gain expertise on second line regimens.

In order to maintain and expand the progress made in fighting the HIV/AIDS epidemic, it is important to design evidence-based intervention that meet current needs. This is the purpose of the HIV/AIDS research agenda.

## ***2. Overview on the HIV/AIDS Research Inventory***

The analysis of existing research is an essential step before a research agenda can be defined. NCHADS therefore decided to establish an inventory of all HIV/AIDS related research ever conducted in Cambodia. The inventory catalogues all HIV/AIDS related research studies, and hence aims at aggregating all published knowledge on the HIV/AIDS epidemic and the response to it.

A broad definition of what to consider as research was used in the inventory. Research was understood as "a systematic investigation, designed to develop or contribute to generalizable knowledge."<sup>8</sup> Consequently, many different formats of research were included in the inventory, such as (1) journal articles<sup>9</sup>, (2) reports, (3) evaluations and (4) conference papers. On-going research is only included in the database only if preliminary findings have been presented at a conference or published in a journal.

The research was gathered through two different methodologies. The first one was to conduct database queries, using the Pubmed, Social Science Citation Index and Medscape's eJIAS databases. Searched words were "HIV" and "Cambodia". The second method was to conduct a handsearch, using the snowball method. This means that key organizations were identified and interviewed. These key organizations referred to other organizations that should be interviewed and so on. All organizations were asked to provide copies of their

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<sup>8</sup> University of Virginia, University of Pennsylvania

<sup>9</sup> For instance, Saphonn, V. et al. (2005). "Trends of HIV-1 Seroincidence Among HIV-1 Sentinel Surveillance Groups in Cambodia, 1999–2002." *Journal of Acquired Immune Deficiency Syndromes* 39(5): 6

<sup>10</sup> For instance, RHAC (2006). *Knowledge and Behavior of Young People on STI, Family Planning and HIV/AIDS*. Phnom Penh: 43

<sup>11</sup> For instance, Sopheab, H. et al. (2006). *Community Action for Preventing HIV in Cambodia*. XVI International AIDS Conference. Toronto.

<sup>12</sup> For instance, Thwyn, A. (2006). *Food Support to People Living With HIV/AIDS and OVC with Home Based Care*. Phnom Penh, KHANA, USAID and WFP

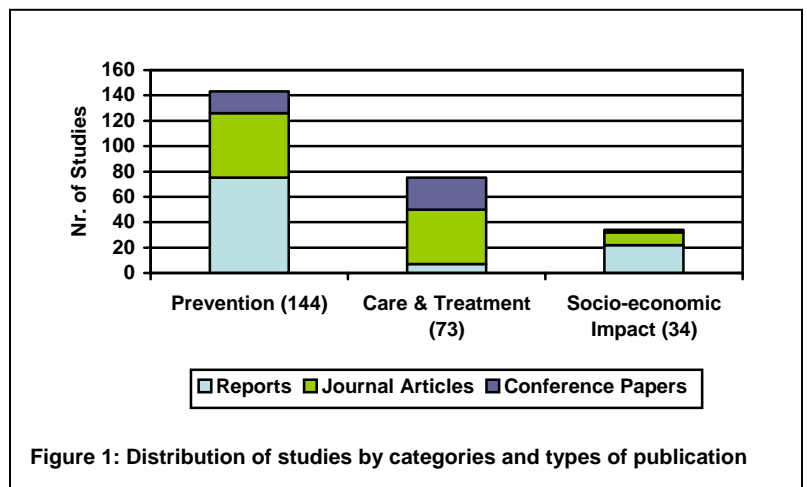
<sup>13</sup> Pubmed and social science citation index contain references and abstracts from peer-review journals, and eJIAS contains references and abstracts from the major international HIV/AIDS conferences.



research studies and to identify the most pressing knowledge gaps from their point of view.<sup>14</sup>

A total of 30 organizations have provided their input. Two thirds of them were interviewed, and one third provided their inputs via e-mail etc. The organizations can be divided into the following groups: (1) government institutions<sup>15</sup>; (2) national NGOs<sup>16</sup>; (3) international NGOs<sup>17</sup> (4) international organisations<sup>18</sup>; (5) bilateral donors<sup>19</sup> and (6) other research institutions<sup>20</sup>.

Once the research was collected, all studies were entered into an electronic database and categorized. More than 500 research studies were found and about 250 of them had been reviewed at the time of the workshop.<sup>21</sup> The main three categories used were prevention,



care & treatment and socio-economic impact. The analysis shows that the majority of research has been conducted on HIV prevention. The types of research publications vary widely across the different areas (see figure 1). The majority of prevention and socio-economic impact publications are reports, whereas the majority of care & treatment publications are journal articles and conference papers. An explanation for this lies in the organizations active in the respective areas. Care & treatment researchers might be better linked with the

<sup>14</sup> The snowball method was a very good way to quickly see who forms part of the Cambodian HIV/AIDS research community. But it had the disadvantage that it organizations outside the network were excluded. For instance, interviews were only conducted with organizations that have a headquarter in Phnom Penh.

<sup>15</sup> NCHADS, NIPH, CENAT, Social Health Clinic and Calmette Hospital

<sup>16</sup> Medicam, KHANA, CNP+, RAHC, RACHA and Korsang

<sup>17</sup> CARE, FHI, PSI, Save the Children Australia, Helen Keller, MSF France and Center of Hope

<sup>18</sup> UNAIDS, WHO, UNDP, UNESCO, UNFPA, UNIFEM, WFP, ILO and the World Bank

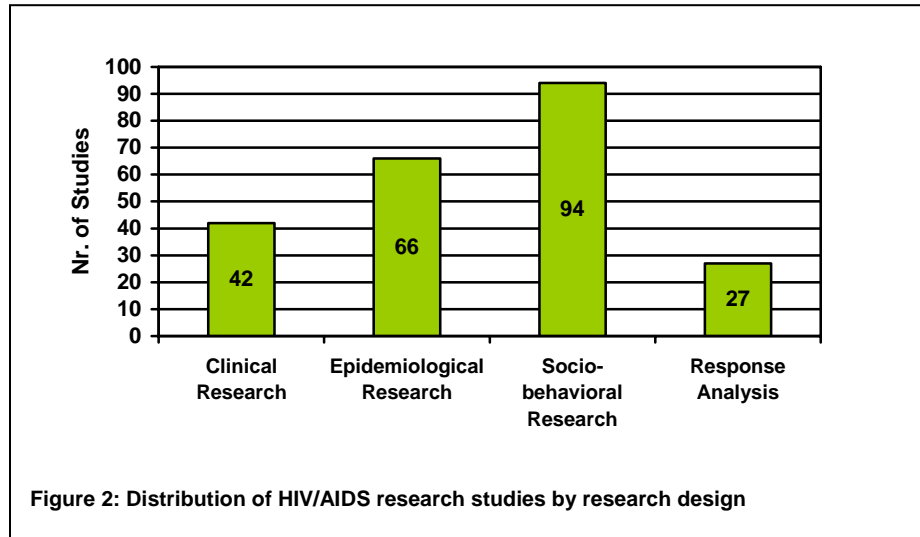
<sup>19</sup> GTZ, JICA, USAID, US-CDC and DFID

<sup>20</sup> Institute of Tropical Medicine, University of New South Wales, Pasteur Institute and the Policy Project

<sup>21</sup> All numbers on research studies used in this report are directly taken from the workshop, even though the inventory has been updated since.

international public health community and therefore publish their results more often in journals or present them in conferences. However, this may also mean that care & treatment researchers are less interested in making their results know locally.

After having been categorized under the areas of prevention, care & treatment or socio-economic impact, studies were labelled according to the four categories of:



(1) Clinical research, meaning experimental research with patients; (2) epidemiological research, assessing prevalence and/or incidence of HIV and other relevant diseases; (3) socio-behavioural research, looking at behaviours and social characteristics, and (4) response analysis, assessing the accuracy of the response (Figure 2). The majority of studies conducted are socio-behavioral research. However, the high number of socio-behavioral research correlates with the high number of prevention studies, which often assess knowledge, attitudes and practices of specific population groups.<sup>22</sup>

<sup>22</sup> One problem with this categorization is that there are overlaps between the different research designs. Second generation surveillance would for instance fall both under epidemiological and socio-behavioural research.

### 3. Prevention Research

#### 3.1 Review of Existing Research

Prevention has been an important component in Cambodia's strategic HIV/AIDS plans since the early 90ies. As a result, organizations working in HIV prevention continuously need evidence from research to know what population groups to target, how to target them and to find out whether their interventions have been successful. In light of the upcoming funding cuts in HIV/AIDS work and the growing significance of care & treatment, it is especially important for prevention research to focus their research on priority areas in the future.

The high number of prevention studies in the inventory reflect this long-standing engagement. Nearly 60% of all studies in the inventory are on prevention (143 out of 255). Out of these, 58% have been carried out as socio-behavioral research<sup>23</sup>, 26% with an epidemiological research design<sup>24</sup>, 9% focus on response analysis<sup>25</sup> and 6% have a clinical research design<sup>26</sup>. Research in prevention started in 1995, and has steadily increased since (Figure 3).<sup>27</sup>

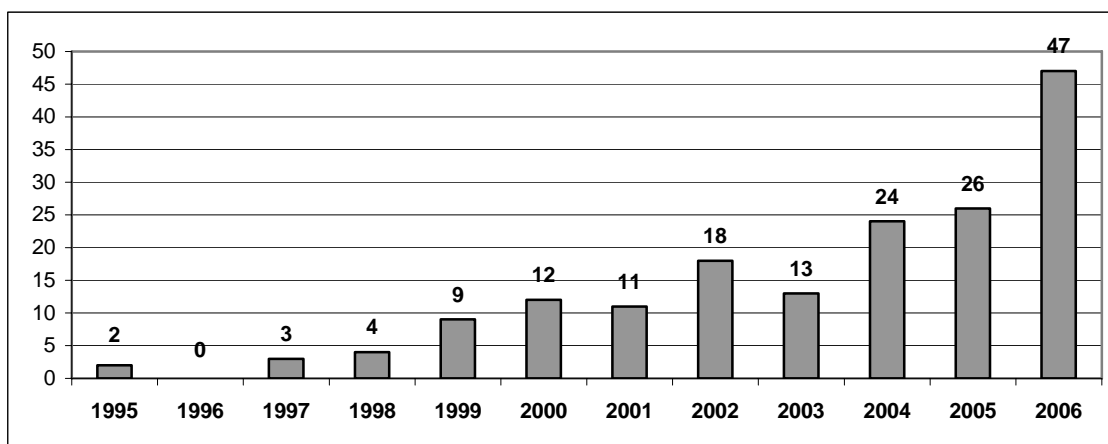


Figure 3: Trend in number of prevention research studies in Cambodia from 1995 to 2006

<sup>23</sup> For instance: Sopheab, H., K. Fylkesnes, et al. (2006). "HIV-Related Risk Behaviors in Cambodia and Effects of Mobility." *Journal of Acquired Immune Deficiency Syndromes* 41(1): 6.

<sup>24</sup> For instance: Hor, L. B., R. Detels, et al. (2005). "The Role of Sex Worker Clients in Transmission of HIV in Cambodia." *International Journal of STD and AIDS* 16(2): 170-174.

<sup>25</sup> For instance: Walston, N. (2005). Country Analysis of Family Planning and HIV/AIDS Programs: Cambodia, Policy Project.

<sup>26</sup> For instance: Lopalco, L., C. Barassi, et al. (2005). "Predictive Value of Anti-cell and Anti-human Immunodeficiency Virus (HIV) Humoral Responses in HIV-1-exposed Seronegative Cohorts of European and Asian Origin." *Journal of General Virology* 86: 339-348.

<sup>27</sup> The following timeline is biased in the sense that the later the research dates back, the more likely the publication is to have been forgotten or lost, and the less likely it is to be reflected in the inventory.

Regarding the issues researched, surveys assessing knowledge, attitudes and behaviours in various population groups are the most common. Sexually transmitted diseases, HIV prevalence<sup>28</sup> and behavior change have also been commonly researched (Figure 4). Despite their importance, there are only two studies on HIV incidence, and only two reports and two conference papers on HIV testing, such as VCCT services.

Additional to certain research issues, it is also important to gather information on specific population groups vulnerable to HIV infection. With the main mode of transmission being heterosexual intercourse, most studies focus on population groups linked to heterosexual commercial sex work. The majority of these are KAB surveys, looking at brothel-based and non-brothel based entertainment workers and their clients. However, new high risk groups have been identified in Cambodia, and recent research also covers men having sex with men (MSM), drug users or mobile populations (see figure 5).

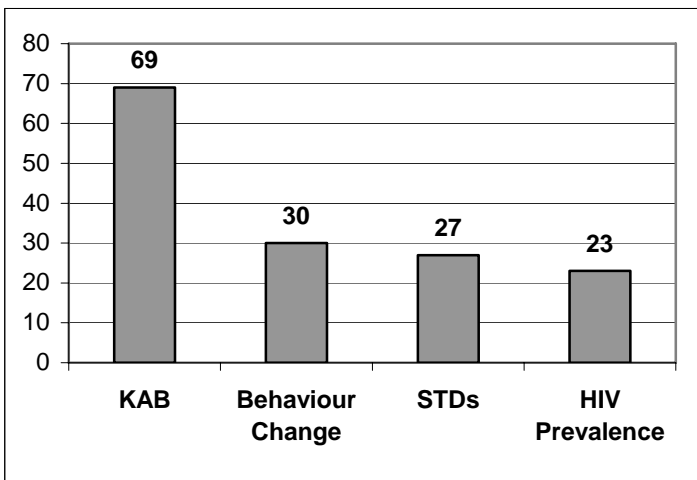


Figure 4: Distribution of existing prevention research studies by topic

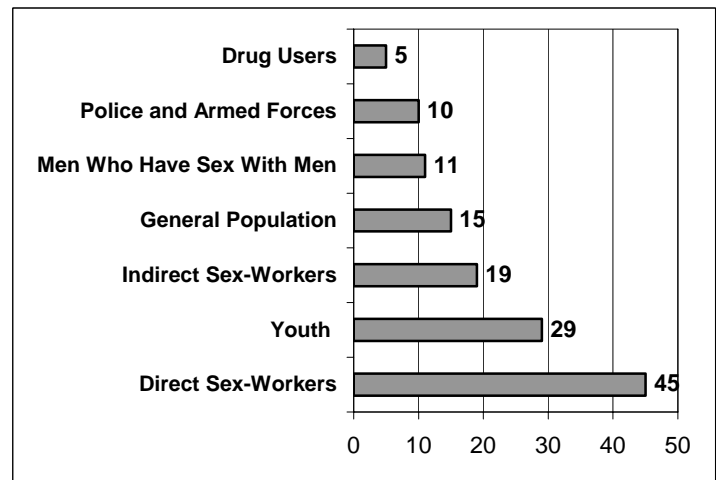


Figure 5: Distribution of existing prevention research studies by population group

<sup>28</sup> Most studies assessing HIV prevalence are NCHADS surveillance reports.

Overall, the strength of prevention research is that all aspects of prevention and nearly all population groups are, at least partially, being covered. Furthermore, prevention research has been taken place since 1995, and the organizations active in this area have remained relatively stable over time. In addition, thanks to a strong behavioural surveillance system, trend analysis on the knowledge, attitudes and practices of entertainment workers, is possible.<sup>29</sup>

### **3.2. Identified Research Priorities**

With one exception<sup>30</sup>, all identified knowledge gaps are somehow reflected in the agreed research priorities. Three main areas were defined: (1) HIV incidence, (2) behaviour change and (3) HIV testing and counseling (Table 1).

(1) HIV incidence has been measured twice using specimens from HIV sentinel serosurveillance in 1999, 2000 and 2002. Because the increasing access to antiretroviral therapy greatly prolongs the lives of people living with HIV/AIDS, HIV prevalence rates are expected to remain stable over the coming years. Therefore, HIV incidence needs to be measured consistently over time to know how many new infections are taking place. HIV incidence measurement hence becomes both important and urgent, and this knowledge gap was unanimously defined as a priority.

(2) Behavior change was a second topic the prevention working group unanimously defined as a research priority.<sup>31</sup> While the high amount of KAP surveys was welcomed, participants felt it was needed to conduct research that provides clear guidance on what type of interventions help to improve safe sexual behavior. The thirty studies in the inventory looking at behavior change

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<sup>29</sup> However, what is striking about research in prevention research is that there is little variation in research designs. The majority of studies are conducted as socio-behavioral research, assessing knowledge, attitudes and practices and mainly asking the same questions.

<sup>30</sup> The exception was the knowledge gap around sexually transmitted diseases. Reason for this was that the issue was felt to be important, but less urgent than the other topics.

<sup>31</sup> Behavior change is defined as activities that help a person or a community to reflect upon their risk behaviors and change them to reduce their risk and vulnerability.

are mainly project specific evaluations with small sample sizes, and do not primarily aim at producing general recommendations for certain population groups. The two main identified populations groups in need of behaviour change research are **young people** and **discordant couples**, which includes pregnant mothers and their partners.

Even though a vast amount of studies on youth already exist in the inventory, young people are and will remain an important target group for HIV prevention. Three specific questions on behavior change in young people were identified. The first one was sexual networking, meaning to analyze how young people interact sexually, between themselves and other groups. A survey specifically focusing on youth sexual behaviour would be useful here. Furthermore, research has shown that young people are aware of HIV, know how it is transmitted and have access to condoms. But studies also show that consistent condom use is still low. A better understanding of the communication and interaction between young people is needed to clarify why sexual behaviors have not yet changed. At the moment, none of the nine studies assessing behavior change in youth address this topic. A qualitative research design was recommended, which should easily be feasible. The third proposed research topic is to compare the knowledge, attitudes and behaviours of young people in rural and urban areas. Even though research on young people outside Phnom Penh exists, there is no study that explicitly compares urban and rural areas. This would however be important, since the lives of young people in the countryside are expected to be differ greatly from that in Phnom Penh.

The second target group are discordant couples. Surprisingly, no studies on prevention in discordant couples exist. But due to the arrival of ART, the number of discordant couples is expected to be increasing, making this an important and urgent topic for research. Research might be carried out with a prospective clinical research design.

In addition to research on discordant couples themselves, the prevention of mother to child transmission is another area where more information is needed. As the part on HIV/AIDS programmes has shown, not enough pregnant women use PMTCT services. Existing research mainly assesses the technicalities of PMTCT, and a few conference papers in 2006 address the low coverage of PMTCT services. This is a well-suited topic for qualitative research as well.

(3) The number of VCCT services has been massively scaled up in the last two years, and VCCT services are the link between prevention and care & treatment. However, only nine research studies have been conducted on HIV testing in Cambodia. Most of these either assess the impact of HIV testing upon behavior change, or the functioning of HIV testing services. Three topics deserve particular attention. First, research should be conducted on how obstacles towards testing can be overcome for drug users, men who have sex with men, entertainment workers, pregnant women and tuberculosis patients. Second, the quality of counseling services should be evaluated from provider and client perspectives. Third, to more extensively assess the impact of VCCT on behavior change and the access and impact of couple counseling. As most of the proposed research topics deal with questions of access and satisfaction, research should have a qualitative component.

Participants in the prevention working group did not only discuss what to research, but also how the quality of research can be improved. They expressed a need to strengthen capacity to gather data through sound methodologies, as well as to analyze it. Quantitative and qualitative methods should be used more often side by side to validate findings. In addition, it would be useful to carry out joint program evaluations to get a better impression of what type of interventions work and which do not.

<b>Topic</b>	<b>Importance</b>	<b>Urgency</b>	<b>Feasibility</b>	<b>Rank</b>
<b>1. HIV incidence</b>				
HIV incidence among all high risk groups/integrated with HSS	High	High	High	High
<b>2. Behavior change regarding to HIV infection</b>				
<u>Youth (already exist in the inventory)</u>				
> Sexual networking	High	Mid	High	High
> Understand communication between young people (need more qualitative)	High	Mid	High	High
> Compare youth situation in rural vs urban	High	Mid	High	High
<u>Discordant couple/pregnant mother and their couple (HIV test, care)</u>	High	High	High	High
<b>3. Access to HIV testing and counselling and testing uptake</b>				
Groups to study/ DU, MSM, Sex worker, ANC and TB patients	High	High	High	High
Look at the quality of service from client and provider perspective	High	High	High	High
Impact of VCT on behavior change/couple counselling	High	High	High	High

Table 1: Overview of Prevention Research Priorities



## **4. Care & Treatment**

### **4.1. Review of Existing Research**

Care and treatment of HIV/AIDS has increasingly become important in Cambodia. As most interventions are fairly new, research is needed to analyze whether they are successfully implemented. This evidence is especially necessary to expand quality services. However, because this area is so new, a lot of research is still on-going and hence not included in the review.

Overall, the area of care and treatment makes up for nearly one third of all studies in the inventory.<sup>32</sup> The majority of the care and treatment studies are epidemiological research (76%).<sup>33</sup> Response Analysis<sup>34</sup> (22%) follows before experimental<sup>35</sup> (1%) and socio-behavioral research<sup>36</sup> (1%). The main topics covered in epidemiological research are prevalence and incidence of opportunistic infections and their treatment. When looking at specific opportunistic infections, tuberculosis is researched the most. The outcomes of antiretroviral treatment are a second topic that is quite well documented. Most of these entries are conferences papers that analyze survival rates and its determinants. The study of ART resistance has been initiated, but remains limited.

A chronological review of existing research shows that the first care & treatment research study in the inventory was carried out in 1994, documenting the spread of HIV among hospital patients. This study was followed by one more study in 1997 and two more studies in 1999, of which one looks at HIV subtyping. The numbers of studies increased with the start of antiretroviral treatment in 2001 and

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<sup>32</sup> 75 out of 255 references.

<sup>33</sup> For instance, Sok, P., J. I. Harwell, et al. (2006). "Demographic and Clinical Characteristics of HIV infected Inpatients and Outpatients at a Cambodian Hospital." *AIDS Patient Care STDS* **20**(5): 369-78.

<sup>34</sup> For instance, WHO (2006). *The Continuum of Care for People Living With HIV/AIDS in Cambodia: Linkages and Strengthening in the Public Health System. Case Study*. Phnom Penh.

<sup>35</sup> For instance, Ferradini, L., et al. *Efficacy of Kaletra-based Second Line Antiretroviral Treatment in Cambodia in CROI*. 2007. Los Angeles.

<sup>36</sup> For instance, Thwyn, A., *Food Support to People Living With HIV/AIDS and OVC with Home Based Care*. 2006, KHANA, USAID and WFP: Phnom Penh.

nearly doubled in 2005 compared to 2004, and more than doubled in 2006 compared to 2005. (Figure 6)

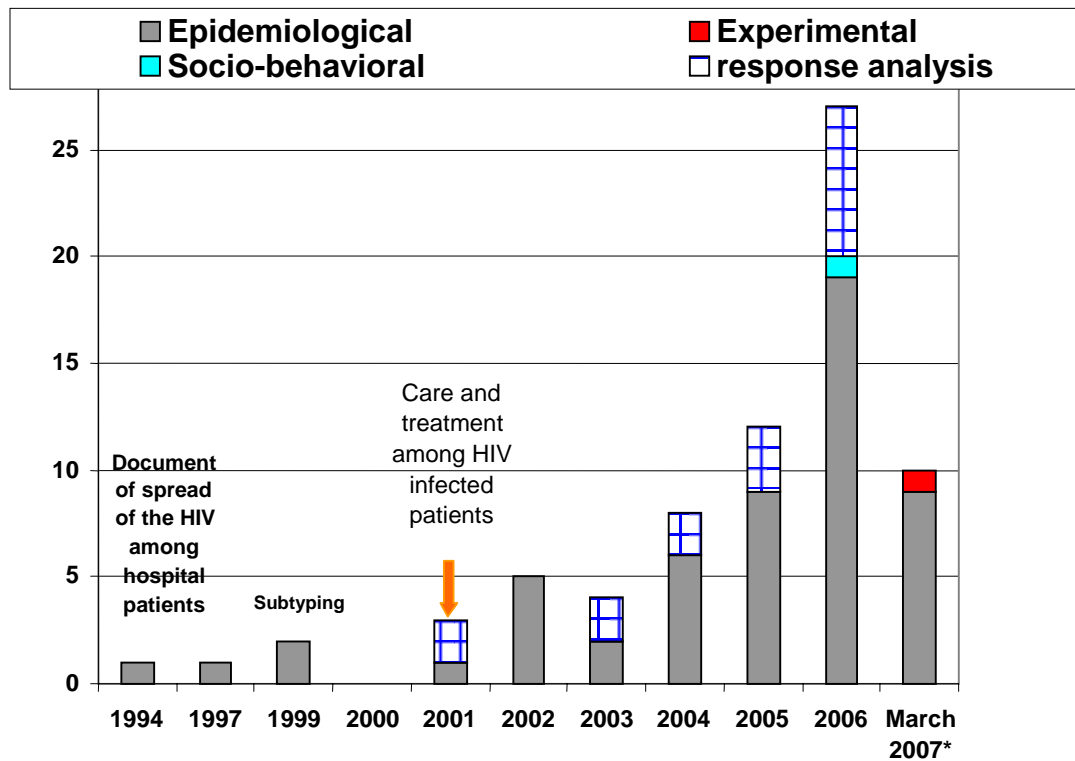


Figure 6: Trend in number of existing care and treatment research studies from 1994 to March 2007

Care and treatment studies already cover a wide range of topics. Research has made a good start in nearly all areas. Also, opportunistic infections are well covered, which allows for sound drug forecasting. New testing and treatment strategies for developing countries are underway in Cambodia that may also be useful internationally. This is the case of the study on best methodologies for CD4 testing and best time for initiating ART for TB/HIV co-infected patients. However, the review also reveals that important areas have been neglected, such as in-depth studies on ART adherence, nutrition needs of Cambodian PLHA and how to efficiently treat special risk groups, such as drug users.

## 4.2. Identified Research Priorities

The care and treatment group identified 29 knowledge gaps, of which ten were identified as research priorities.<sup>37</sup> The top three priorities are (1) long-term adherence, (2) stigma and discrimination amongst health care professionals and (3) viral load testing (Table 2).

(1) Antiretroviral treatment has become widely available throughout the country in the last two years. Evidence on adherence to ARTs is therefore vital before services can be scaled up to universal access. Also, monitoring of adherence gives a first indication of the development of ART resistance. Currently, only a few conference papers present first findings on adherence, showing that treatment compliance is very good. Patients report of doses taken late, but rarely missed doses.<sup>38</sup> While reasons for stopping used to be related to financial problems, they now mainly seem to be related to side effects.<sup>39</sup> However, given that access to ARTs is still fairly new to most patients, it is important to measure adherence over the long term, meaning several years instead of months.

(2) Stigma and discrimination is an area which has hardly been researched in Cambodia. About four studies in the inventory look at this topic, and they mainly report that the access to health services and antiretroviral treatment decrease stigma and discrimination.<sup>40</sup> There is no study measuring the effects of stigma and discrimination on getting tested and treated in the first place. For instance, stigma and discrimination might be one reason why only so relatively few women seek PMTCT services. In the research, a special focus on the role of health care professionals and communities is recommended.

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<sup>37</sup> For instance, drug resistance was defined as a knowledge gap, but the issue did not rate high enough on importance, urgency and feasibility.

<sup>38</sup> Phlong, P., J. Elliott, et al. (2006). HIV Treatment Beliefs and Practices and Adherence to Antiretroviral Therapy in Cambodia. XVI International AIDS Conference, Toronto.

<sup>39</sup> Un, P., T. Sopheak, et al. (2005). Evolution of Use of Antiretroviral Therapy (ART) Among Homecare Patients in Phnom Penh, Cambodia, from 2001 till 2004. The 3rd IAS Conference on HIV Pathogenesis and Treatment.

<sup>40</sup> For instance, Eap, S. and C. Chansophoan (2006). Challenging of PLHA Support Group in HIV/AIDS Care and Treatment as a Key Success in Continuum of Care (CoC) in Banteay Meanchey (BMC) Province, Cambodia. XVI International AIDS Conference, Toronto

(3) In addition to CD4 count, viral load testing is an important indicator for measuring treatment outcomes. While CD4 count is available throughout the country, viral load testing is less accessible. Conventional viral load testing is very expensive and requires advanced technology, and Cambodia needs to find cheaper and easier strategies. Research should assess what viral load testing strategies can and should be used in the future. Currently, there are no entries on this topic in the inventory, but research is still on-going.

In this prioritization exercise, the care and treatment group gave points to each research issue. Amongst the three priorities, adherence stood out. It was rated most important, most urgent and most feasible. Stigma and discrimination rated less high on importance and urgency, but received very good scores for feasibility, and viral load testing strategies ranked high on importance and urgency, but was rated last on feasibility.

The other research priorities are (4) barriers to HIV testing and care of women outside high risk groups, (5) HIV drug resistance testing of 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> line ART, (6) short and long term toxicities associated with current ART protocols, (7) prevention among positive, (8) role of home based care in the Continuum of Care, (9) barriers to HIV testing and care of children and (10) effects of poverty on care and treatment, for instance through transportation costs.

It is interesting that there are overlaps and similarities between the priorities identified for prevention and the ones identified for care and treatment. One cross-cutting question seems to be how to reach women outside of high risk groups. The concern for the prevention group was that women do not access testing services for PMTCT as much as hoped. A similar concern was formulated for care and treatment (see priority nr. 4), only that this concern also extends to treatment issues.

1 Adherence over long term	170
2 Stigma and discrimination of health care professionals/ community and impact on testing / treatments/ adher	152
3 viral load testing strategies (best testing strategy- timing)	150
4 Barriers to HIV testing and care of women (not classified as high risk group)	132
5 sequencing 1st , 2nd, 3rd line ART (drug resistance)	131
6 short and long term toxicities associated with current protocols	129
7 Prevention among positive	129
8 Role of Home based care in CoC	129
9 Barriers to HIV testing and care of children	128
10 Poverty / transportation effect on care and treatment	128

Table 2: Overview of Care and Treatment Research Priorities

## **5. Socio-economic Impact Research**

### **5.1. Review of Existing Research**

HIV/AIDS also has wider implications that go beyond the infected individual. In generalized epidemics, HIV affects the whole society, and through that, the economy. HIV/AIDS interventions should therefore not only target people living with HIV/AIDS, but to mitigate the socio-economic impact of the disease. Research is necessary to ensure that the most vital needs are addressed.

37 studies (15% of all research studies) assess the socio-economic impact of HIV/AIDS in Cambodia.<sup>41</sup> Because socio-economic research uses other research designs than public health research, the categories of clinical, epidemiological and socio-behavioral research no longer apply. Instead, studies in this category can be divided according to the issues they deal with. Fourteen (14) studies directly look at the socio-economic impact of HIV<sup>42</sup>, seven (7) studies analyze the problems of and possible solutions for orphans and other vulnerable children<sup>43</sup>, and sixteen (16) studies are labelled as cross-cutting research<sup>44</sup>. The majority of these studies document Cambodia's best practice in containing the HIV/AIDS epidemic.

There are several reasons for the limited number of research on the socio-economic impact. First, the impact of HIV/AIDS is not that strong or not that visible, because HIV prevalence is relatively low. However, only future research can show the extent and the urgency of a need for action around the socio-

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<sup>41</sup> It needs to be added here that studies labelled as „cross-cutting research“ were also categorized under socio-economic impact. Therefore, 22 out of 37 studies assess the socio-economic impact, whereas 15 studies are cross-cutting research. Cross-cutting research goes beyond, or involves all three categories of prevention, care and treatment and socio-economic impact.

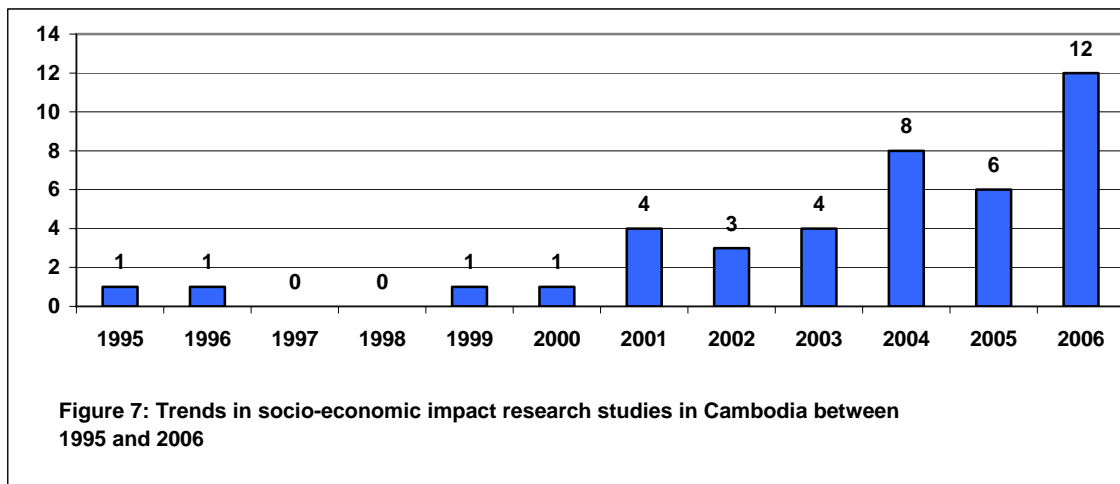
<sup>42</sup> For instance, Alkenbrack, S., T. Chettra, et al. (2004). *The Social and Economic Impact of HIV/AIDS on Families with Adolescents and Children in Cambodia*. Phnom Penh, Ministry of Social Affairs, Veterans and Youth Rehabilitation; USAID and the POLICY Project.

<sup>43</sup> For instance, Save the Children Australia (2006). *Small Also Have Something to Say. A Report on Research into the Effects of HIV/AIDS on Children in Six Asian Countries*. Phnom Penh.

<sup>44</sup> For instance, Leang, P. C. and K. A. Oeun (2003). *Media Review 2003: Analysis of Reporting on HIV/AIDS in Cambodia*. Phnom Penh, USAID.

economic impact of HIV. It is furthermore interesting that a first article on the socio-economic impact of HIV/AIDS was published in 1995<sup>45</sup>, followed by a more extensive report in 1999.<sup>46</sup> This means that research in this area dates nearly as long back as the research in prevention and/or care and treatment.

Gaps in socio-economic research exist in the sense that there is no holistic coverage of the problem. Existing literature appears rather scattered. This means that even the extent of the socio-economic impact of HIV/AIDS is uncertain.<sup>47</sup> Positive about it is, however, that the number of entries per year seems to be on the increase (Figure 7). Also, the issue of orphans and other vulnerable children is quite well covered.



<sup>45</sup> L'Her, P., M. Merlin, et al. (1995). "[Cambodia: The Undermining by AIDS or the Difficult Rebuilding of a Destroyed Country]." *Med Trop (Mars)* 55(1): 21-5.

<sup>46</sup> Bunna, S. and C. N. Myers (1999). *Estimated Economic Impacts of AIDS in Cambodia*. Phnom Penh, UNDP.

<sup>47</sup> Because existing literature is so scarce, it is noteworthy that two studies are planned on socio-economic impact. One is initiated by UNDP in collaboration with government institutions with the objectives to assess the socio-economic impact at the household level at urban and rural settings; and to assess the impact of the HIV/AIDS epidemic at sectoral level. Another study is initiated by NCHADS with DFID funding to assess the quality, efficiency and cost effectiveness and sustainability of the continuum of care for people living with HIV/AIDS. Both studies are expected to finish in June-July 2007.

## 5.2. Identified Research Priorities

Participants in both the prevention and the care and treatment group were asked to put some thinking into the socio-economic impact of HIV/AIDS. This means that participants looked beyond the artificially drawn up boundaries of their group and focused on the problem of HIV as a whole. Also, each group became aware of the importance of the overall socio-economic impact of HIV for their specific work. One expression for this is priority nr. 10 in the care and treatment group: “To assess the effects of poverty in general and transportation costs in particular on care and treatment”.

Two research priorities were identified. The first one is to analyze the cost-effectiveness of programs for PLHA. Currently, four studies look at quality of life of PLHA. They report from changes over time and measure how medical and other support has improved the lives of PLHA. However, the findings are limited geographically and in their sample size.

The second one is to assess the impact of HIV at the household level. This would mean to analyze how households with an HIV-positive family member cope with the situation. Particularly, it would be important to identify the positive and negative coping mechanisms the families are using. One study exists that looks at the social and economic impact of HIV/AIDS on families with adolescents and children in Cambodia.<sup>48</sup> It shows that households with an HIV-infected family member are poorer, but it does not analyze what coping mechanisms the households should be encouraged to use. The findings from this study can serve as a starting point, and a similar research design could be used to make the findings better comparable (using case and comparison households).

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<sup>48</sup> Alkenbrack, S., T. Chettra, et al. (2004). The Social and Economic Impact of HIV/AIDS on Families with Adolescents and Children in Cambodia. Phnom Penh, Ministry of Social Affairs, Veterans and Youth Rehabilitation; USAID and the POLICY Project.



Given that there was no working group dealing with socio-economic impact, some research priorities might have been overlooked. Other possible areas for future research might include the impact and determinants of stigma (currently only mentioned as discrimination by health care professionals), the impact of HIV on the health system (in the sense that HIV should neither dominate or fragment the health system), and the needs of orphans and other vulnerable children (currently, it is not clear what will happen to them after a certain age).

## **V. Implementation of the HIV/AIDS Research Agenda**

During the last session of the workshop, participants agreed on the implementation mechanisms for the agenda's priorities. The discussion was one of the most important, as a clear vision of the process will greatly facilitate the agenda's implementation. In particular, it was decided (1) what duration and scope the research agenda will have, (2) how the inventory will be updated, and (3) how quality of research and funding continuity can be improved.

(1) As proposed by NCHADS, the HIV/AIDS-related research agenda will have a duration of two years. This means that the present research agenda will be valid until March 2009. By that time, a second HIV/AIDS research agenda workshop is to be held to review the previous priorities and identify new ones. Should a past research priority not have been addressed, it will be possible to keep this priority on the agenda. In addition to the workshop, a biannual HIV/AIDS research agenda symposium is to be held. It shall take place in the years between the HIV/AIDS research agenda workshop, mainly targeted at the Cambodian HIV/AIDS research community. Recommended is a one-day meeting, first to be held in March 2008.

The already existing HIV/AIDS research steering committee will serve as a third level to monitor the progress made through bi-monthly meetings. Currently problematic is, however, that the research steering committee comprises less members than form part of the HIV/AIDS research community, and it would not be practical to enlarge the steering committee. Therefore, it is recommended to set-up an e-mail group, to which all Cambodian HIV/AIDS researchers and funders can subscribe. It can be used to send out the reminders, post publications or to alert researchers to other relevant issues.

(2) Workshop participants agreed that NCHADS will continue to maintain and update the inventory of studies. It was furthermore decided to make the inventory more inclusive. In addition to the completed research studies, researchers are also asked to send in copies of their not-yet completed research, in the form of research proposals and/or research protocols.

The inventory will be publicly accessible through the NCHADS website. Different audiences, however, will have different access levels. Research proposals and protocols will be accessible to only those that have sent in their research proposals and protocols. This is meant as an incentive for researcher to share their research ideas, and should encourage communication, collaboration and exchange between researchers. Therefore, a brief description of planned research and the name of a contact person will be sufficient. Already published reports will be accessible to everyone.

To facilitate the maintenance of the inventory, NCHADS will send out bi-yearly reminders to all researchers and ask them to send in information about their research proposals, journal articles, reports, evaluations and conference papers.<sup>49</sup> When doing so, researchers are encouraged to indicate to what research priority their paper contributes.

(3) The issue of quality of research and the need for in-country capacity-building have repeatedly been raised throughout the workshop. Local research is sometimes carried out with weak methodologies, which in return makes the findings difficult to generalize.<sup>50</sup> A few recommendations were issued to improve this.

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<sup>49</sup> NCHADS will use the above mentioned e-mail list to do so. The reminder will be sent out twice a year. Once in January, and once in July.

<sup>50</sup> Another area of concern that workshop participants expressed was a general insecurity on how to translate research findings into action. There are a few research studies that address this topic, for instance Ioannidis, J. P. A. (2007). "Evolution and Translation of Research Findings: From Bench to Where?" [PLOS Clinical Trial](#) e36.

International short-term consultants often carry out research studies. These consultants work outside local structures and hence do not contribute to local capacity building. The first recommendation therefore is that international consultant should work in collaboration with a local consultant. The second recommendation would be that better use should be made of existing training possibilities. Amongst the institutions that offer training, for instance on epidemiology or the use of quantitative and qualitative research methods, are NCHADS, NIPH and PSI. The e-mail list should be used as a forum to announce training courses and to encourage researchers to participate. Furthermore, it was proposed to set up working groups on specific topics to discuss research questions, methods and tools. The existence of such groups would also help to ensure quality of research, and thereby contribute to capacity building.

Regarding possible funding opportunities, the European Commission presented its funding programs for health-related research<sup>51</sup>, and it was brought to the attention of the participants that the Global Fund against HIV/AIDS, Tuberculosis and Malaria allows in its proposals to set aside between 5 to 10% of each component budget on monitoring and evaluation, which includes operational research.<sup>52</sup>

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<sup>51</sup> For more information, see [http://ec.europa.eu/research/health/poverty-diseases/gen-info\\_en.html#countries](http://ec.europa.eu/research/health/poverty-diseases/gen-info_en.html#countries) or [ftp://ftp.cordis.europa.eu/pub/fp7/docs/health\\_international\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/docs/health_international_en.pdf).

<sup>52</sup> The Global Fund against HIV/AIDS, Tuberculosis and Malaria: Guidelines for Proposals Round 7. Geneva: p. 49

## **VI. Annex**

### ***1. Agenda of the Meeting***

#### **Day 1**

8:00 Registration

8:30 Welcome remarks by H.E. Dr. Mean Chhi Vun, Director of NCHADS

9:00 Process of the workshop

9:45 Where are we now in terms of program intervention and epidemic?: H.E. Dr. Mean Chi Vun

10:30 Review of the past and current HIV/AIDS research in Cambodia

- Overall presentation of the process: Nina Ingenkamp
- Prevention: Chhea Chovorn
- Care & treatment: Vonthanak Saphonn
- Socio-economic impact: Heng Sopheab

11:30 Plenary discussion

12:00 Lunch break

2:00 Identification of knowledge gaps: SWOT analysis

3:30 Tea break

4:00 Presentation from the groups

5:00 Closing

## Day 2

8:00 Wrap up day 1

8:15 Group discussion: Link knowledge gap to program and set up research agenda. Objective of this discussion is to prioritize knowledge gaps. Teams should clarify the priorities based on:

- Importance
- Urgency
- Feasibility/suitable funding

9:30 Break

9:45 Group discussion

10:30 Group work presentation on agreed research themes

12:00 Lunch break

2:00 Summary of HIV/AIDS Research agenda for Cambodia – (2007 –2008):  
Vonthanak Saphonn

3:00 Discussion

3:30 Break

4:00 Agreement on step forwards (Plenary discussion)

- How frequent should agenda be revised?
- When will be the next workshop?
- Who should update the agenda?
- How should we all endorse this agenda?
- Capacity building and quality of research?

4:45 Closing Ceremony

## 2. List of Participants

No	Name	Organization
1	Voeung Yanath	National AIDS Authority
2	Mok Sokuntheary	National Center for HIV/AIDS, Dermatology and STD's
3	Ros Seilarith	Sihanouk Hospital Centre of Hope
4	Voeu Vanny	National Center for HIV/AIDS, Dermatology and STD's
5	Rin Rachana	National Center for HIV/AIDS, Dermatology and STD's
6	Neak Sokha	National Center for HIV/AIDS, Dermatology and STD's
7	Phal Sano	National Center for HIV/AIDS, Dermatology and STD's
8	Nina Ingenkamp	World Health Organization
9	Carla Obermeyer	World Health Organization Geneva
10	Vong Sathiarany	National Maternal and Child Health Centre
11	Nicole Seguy	World Health Organization
12	Khun Kim Eam	National Center for Tuberculosis and Leprosy Control
13	Mean Ratanak Sambath	University Research Co.
14	Phon Nimol	National Center for HIV/AIDS, Dermatology and STD's
15	Khim Sam Ath	Médecins Sans Frontieres Belgium
16	Katy Pullen	United Nations Development Fund for Women
17	Matt Maggenheim	Clinton Foundation
18	Bou Noeun	Delegation of the European Commission to Cambodia
19	Ung Bunthoeun	Medicam
20	Daniel Tarantola	University of New South Wales
21	Leap Sreyluch	Cambodian People Living with HIV/AIDS Network
22	Sin Sovann	National Centre for Health Promotion
23	Tuot Sovannary	Khmer HIV/AIDS NGO Alliance
24	Sam Sochea	United Nations Population Fund
25	Ung Vibol	National Pediatric Hospital
26	Prum Virak	Family Health International
27	Thai Sopheak	Sihanouk Hospital Center of HOPE
28	Long Dianna	Population Service International
29	Tony Lisle	The Joint United Nations Programme on HIV/AIDS

30	Brad Hersh	United States Center for Disease Control
31	Joyce Neal	United States Center for Disease Control
32	Francois Crabbe	Institute of Tropical Medicine Antwerp / National Center for HIV/AIDS, Dermatology and STD's
33	Cham Ketsaus	Reproductive and Child Health Alliance
34	Nicolet Hutter	Department for International Development
35	Khieu Serey Vutha	Reproductive and Child Health Alliance
36	Kaoeun Chetra	National Center for HIV/AIDS, Dermatology and STD's
37	Chiv Sothat	National Center for HIV/AIDS, Dermatology and STD's
38	LAC KM	National Center for HIV/AIDS, Dermatology and STD's
39	Guy Morineau	Family Health International
40	Duong Danaith	University of Health and Science
41	Lyn Maysou	Save the Children Australia
42	Seng Sut Wantha	United Nations Development Programme
43	Tean Lui Sarthou	Pasteur Institute
44	KHATH Maracly	National Center for HIV/AIDS, Dermatology and STD's
45	Robert Olrichs	World Bank
46	Phin Kanjana	National Center for HIV/AIDS, Dermatology and STD's
47	Silja Rajander	United Nations Educational, Scientific, and Cultural Organization
48	Sarah Huffan	National Center for HIV/AIDS, Dermatology and STD's
49	Delphine Scullier	Institute of Tropical Medecine Antwerp / Sihanouk Hospital Centre of Hope
50	Miriam Haverkamp	Sihanouk Hospital Centre of Hope
51	Heng Mory	World Food Programme
52	Ivek Ncu..	Reproductive Health Association Cambodia
53	Aun Hemrin	Reproductive Health Association Cambodia
54	Chel Sarim	National Center for HIV/AIDS, Dermatology and STD's
55	Techman Pamela	United States Agency for International Development
56	Tom Heller	United States Center for Disease Control
57	Mun Phalkun	National Center for HIV/AIDS, Dermatology and STD's
58	Sovatha Mam	National Center for HIV/AIDS, Dermatology and STD's
59	Hun Hokseng	National Center for HIV/AIDS, Dermatology and STD's



60	Heng Sopheab	National Center for HIV/AIDS, Dermatology and STD's
61	Chhea Chhorvann	National Center for HIV/AIDS, Dermatology and STD's
62	Arunsin Phothong	European Commission Bangkok
63	Chin Sedtha	United Nations Children's Fund
64	Ngin Lina	National AIDS Authority
65	Born Sam Oun	National Center for HIV/AIDS, Dermatology and STD's
66	Chea Tyna	National Center for HIV/AIDS, Dermatology and STD's
67	Samreth Sovannarith	National Center for HIV/AIDS, Dermatology and STD's
68	Kea Chettra	National Center for HIV/AIDS, Dermatology and STD's
69	Neth Sansothy	National Center for HIV/AIDS, Dermatology and STD's

### **3. Inventory of HIV/AIDS Research Studies (as of 28/3/07)**

#### 0. List of Available Keywords

##### I. Prevention

1. Clinical Research
2. Epidemiological Research
  - 2.1. Prevalence
  - 2.2. Incidence
  - 2.3. Additional Epidemiological Research
3. Socio-behavioral Research
  - 3.1. Behavior Change
  - 3.2. Knowledge, Attitudes and Practices
  - 3.3. Additional Socio-behavioral Research
4. Response Analysis

##### II. Care & Treatment

1. Clinical Research
  - 1.1. Basic Science
  - 1.2. Antiretroviral Treatment
  - 1.3. Pediatric Care
  - 1.4. Additional Clinical Research
2. Epidemiological Research
  - 2.1. Opportunistic Infections
  - 2.2. Additional Epidemiological Research
3. Socio-behavioral Research
  - 3.1. Nutrition
  - 3.2. Additional Socio-behavioral Research
4. Response Analysis

##### III. Socio-economic Impact

1. OVCs
2. Macro/Micro Economic Impact
3. Documenting Best Practice
4. Other Research on Socio-economic Impact

## List of Available Keywords

Antiretroviral Treatment	(13 entries)
ART Resistance	(2 entries)
Basic Science	(9 entries)
Behavior Change	(21 entries)
Blood Donors	(2 entries)
Care & Treatment	(73 entries)
CD4 Count	(4 entries)
Clinical Research	(42 entries)
Condom-use	(18 entries)
Cross-cutting Research	(16 entries)
Direct Sex-Workers	(37 entries)
Drug Resistance	(3 entries)
Drug Users	(5 entries)
Epidemiological Research	(66 entries)
Evaluation	(10 entries)
General Population	(11 entries)
HIV Testing	(4 entries)
Home-based Care	(1 entry)
Incidence	(2 entries)
Indirect Sex-Workers	(17 entries)
KAP	(64 studies)
Male Sexuality	(13 entries)
Men who have sex with men	(7 entries)
Mobile Populations	(6 entries)
Nutrition	(2 entries)
Opportunistic Infections	(33 entries)
OVCs	(6 entries)
Pediatric Care	(9 entries)
PLHA	(11 entries)
PMTCT	(5 entries)
Police and Armed Forces	(8 entries)
Pregnant Women	(2 entries)
Prevalence	(25 entries)
Prevention	(144 entries)
Response Analysis	(27 entries)
Sexually Transmitted Diseases	(24 entries)
Socio-behavioral Research	(94 entries)
Socio-economic Impact	(20 entries)
Stigmatization	(2 entries)
Surveillance	(20 entries)
Viral Load	(1 entry)
Youth	(25 entries)

## **I. Prevention**

### **1. Clinical Research**

Capoulade-Metay, C., L. Ma, et al. (2004). "New CCR5 Variants Associated With Reduced HIV Coreceptor Function in Southeast Asia." Aids **18**(17): 2243-52: Prevention; Clinical Research.

Lopalco, L., C. Barassi, et al. (2005). "Predictive Value of Anti-cell and Anti-human Immunodeficiency Virus (HIV) Humoral Responses in HIV-1-exposed Seronegative Cohorts of European and Asian Origin." Journal of General Virology **86**: 339-348: Prevention; Clinical Research.

Neal, J. J., J. N. Spencer, et al. (2005). Phase I Validation of Rapid HIV Tests for Voluntary Counseling and Testing Centers in Cambodia. Seventh International Congress on AIDS in Asia and the Pacific, Kobe, Japan: Prevention; Clinical Research; HIV Testing.

Ngin, S., L. T. t. Xuan, et al. (2006). The HIV-1 RNA real time PCR: A Low Cost Strategy to Diagnose HIV Infection in Infants Born from HIV-infected Mothers in Cambodia and Viet Nam. XVI International AIDS Conference, Toronto: Prevention; Clinical Research; PMTCT; Pediatric Care

Nguyen, M., P. Pean, et al. (2006). "HIV-Specific Antibodies But Not T-cell Responses Are Associated with Protection in Seronegative Partners of HIV-1-Infected Individuals in Cambodia." J Acquir Immune Defic Syndr **42**(4): 412-9: Prevention; Clinical Research.

Nouhin, J. and M. Nguyen (2006). "Evaluation of a Boosted-p24 Antigen Assay for the Early Diagnosis of Pediatric HIV-1 Infection in Cambodia." Am J Trop Med Hyg **75**(6): 1103-5: Prevention; Clinical Research; Pediatric Care; PMTCT

O'Farrell, N., F. Crabbe, et al. (2006). Periodic Presumptive Treatment for Cervicitis in Female Sex Workers in Cambodia: A Cheap, Simple Sustainable HIV Prevention Strategy. XVI International AIDS Conference, Toronto: Prevention; Clinical Research; Direct Sex-workers; Sexually Transmitted Diseases.

Page-Shafer, K., V. Saphonn, et al. (2005). "HIV Prevention Research in a Resource-limited Setting: The Experience of Planning a Trial in Cambodia." Lancet **366**(9495): 1499-503: Prevention; Clinical Research; Response Analysis.

Saman, M., L. Kruey, et al. (2002). "Feasibility of Antenatal and Late HIV Testing in Pregnant Women in Phnom Penh, Cambodia: The PERIKAM/ANRS1205 Study." AIDS 16(6): 950-951: Prevention; Clinical Research; PMTCT.

Sarthou, J. L. (2002). "Nouveaux Vaccins et Cavvins du Futur." Revue des Practiciens du Cambodge 2002(6): 1: Prevention; Clinical Research.

## **2. Epidemiological Research**

### 2.1. Surveillance

Cambodian Working Group on HIV/AIDS Infections (2002). Projections for HIV/AIDS in Cambodia 2000-2010. Phnom Penh: 61: Prevention; Epidemiological Research; Surveillance; Socio-economic Impact;

Ministry of Health and National Center for Tuberculosis and Leprosy Control (2003). National HIV Seroprevalence Survey Amongst TB Patients in Cambodia, 2003. Phnom Penh: Prevention; Epidemiological Research; Prevalence; Surveillance

Ministry of Health and National Center for Tuberculosis and Leprosy Control (2005). National HIV Seroprevalence Survey Amongst TB Patients in Cambodia, 2005. Phnom Penh: Prevention; Epidemiological Research; Prevalence; Surveillance

Morineau, G., H. Sopheab, et al. (2005). Mapping HIV Surveillance Data in Cambodia. Seventh International Congress on AIDS in Asia and the Pacific, Kobe, Japan: Prevention; Epidemiological Research; Prevalence; Surveillance

National Institute of Statistics, Ministry of Planning, et al. (2000). Cambodian Demographic and Health Survey. Phnom Penh: 35: Prevention; Epidemiological Research; Surveillance

NCHADS (1998). Report on Sentinel Surveillance in Cambodia. Phnom Penh: 54: Prevention; Epidemiological Research; Direct Sex-Workers; Indirect sex-workers; Police and Armed Forces; Women; Surveillance

NCHADS (1999). HIV Sentinel Surveillance. Phnom Penh: 61: Prevention; Epidemiological Research; Prevalence; Surveillance

NCHADS (2000). HIV Sentinel Surveillance. Phnom Penh: 63: Prevention; Epidemiological Research; Prevalence; Surveillance

NCHADS (2000). STI Prevalence Survey and Algorithm Validation Study. Phnom Penh: 46: Prevention; Epidemiological Research; Sexually Transmitted Diseases; Surveillance

NCHADS (2001). HIV Sentinel Surveillance. Phnom Penh: 46: Prevention; Epidemiological Research; Prevalence; Surveillance

NCHADS (2002). Dissemination Workshop of HIV Sentinel Surveillance in Cambodia. Phnom Penh: 27: Prevention; Epidemiological Research; Prevalence; Surveillance

NCHADS (2003). HIV Sentinel Surveillance. Phnom Penh: 76: Prevention; Epidemiological Research; Prevalence; Surveillance

Neal, J. J., S. Heng, et al. (2005). Cambodian HIV Sentinel Surveillance and the Importance of Quality Control. Seventh International Congress on AIDS in Asia and the Pacific, Kobe, Japan: Prevention; Epidemiological Research; Prevalence; Surveillance

Phalla, T., H. B. Leng, et al. (1998). "HIV and STD Epidemiology, Risk Behaviors, and Prevention and Care Response in Cambodia." AIDS 12: 11-18: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Cross-cutting Research; Surveillance

Saphonn, V., L. B. Hor, et al. (2001). "How Well Do Antenatal Clinic Attendees Represent the General Population? ." Journal of Acquired Immune Deficiency Syndromes 79(4): 7: Prevention; Epidemiological Research; General Population; Pregnant Women; Surveillance

Solomon, P. J. and V. S. Isham (2000). "Disease surveillance and data collection issues in epidemic modelling." Stat Methods Med Res 9(3): 259-77: Prevention; Epidemiological Research; Surveillance

Sopheab, H., P. M. Gorbach, et al. (2003). "Rural Sex work in Cambodia: Work Characteristics, Risk Behaviours, HIV, and Syphilis." Journal of Acquired Immune Deficiency Syndromes 79(4): 3: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Direct Sex-Workers; Surveillance

## 2.2. HIV and STI Prevalence

Cohen, J. (2003). "Cambodia: Can a Drug Provide Some Protection?" Science 301(5640): 1660-1: Prevention; Epidemiological Research;

Crabbé, F., Seng, S.W., et al. (2001). Over-treatment of Cervical Infection in Lower Risk Women in Cambodia, The Sixth International Conference on

- AIDS in the Asia and the Pacific, Melbourne , Australia, 2001. Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Response Analysis
- Fraser Chanpong, G. M., M. Putri, et al. (2001). "Prevalence of HIV Infection in Cambodia: Implications for the Future." Int J STD AIDS 12(6): 413-4: Prevention; Epidemiological Research.
- Girault, P., T. Saidel, et al. (2004). "HIV, STIs, and Sexual Behaviors among Men who have Sex with Men in Phnom Penh, Cambodia." AIDS Educ Prev 16(1): 31-44: Prevention; Epidemiological Research; Prevalence; Socio-behavioral Research; KAP; Men who have sex with men; Sexually Transmitted Diseases.
- Hor, L., C. Vanarith, et al. (2004). How Resource Poor Cambodia Could Stabilize its HIV Epidemic. The XV International AIDS Conference, Bangkok: Prevention; Epidemiological Research; Cross-cutting Research.
- Hor, L. B., R. Detels, et al. (2005). "The Role of Sex Worker Clients in Transmission of HIV in Cambodia." International Journal of STD and AIDS 16(2): 170-174: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Male Sexuality; Condom-use.
- Kim, A. A., L. P. Sun, et al. (2005). "High Prevalence of HIV and Sexually transmitted Infections among Indirect Sex workers in Cambodia." Sex Transm Dis 32(12): 745-51: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Indirect Sex-Workers.
- Monchy, D., K. Khy, et al. (2004). "Mise en Place d'un Controle de Qualité de la Sérologie de l'Infection par le VIH. Bilan de 6 Anées de Fonctionnement dans les Centres de Dépistage Anonyme et Gratuit auch Cambodge." Feuillets de Biologie 45: 71-74: Prevention; Epidemiological Research; Response Analysis.
- Muller, A., C. Bendick, et al. (2001). "Seroprevalence of Human Herpesvirus-8 in Different Patient Groups in Cambodia and Germany." Eur J Clin Microbiol Infect Dis 20(4): 291-3: Prevention;Epidemiological Research; Prevalence; Opportunistic Infections.
- Neal, J. J., H. Sopheab, et al. (2004). Integrated HIV, STD, and behavioral survey among female sentinel groups, Banteay Meanchey Province, Cambodia, 2003. The XV International AIDS Conference, Bangkok: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Direct Sex-Workers; Indirect sex workers; Pregnant Women.

- Ohshige, K., S. Morio, et al. (1999). "Epidemiology Study on HIV/AIDS in Cambodia. Seroprevalence of HIV/STD Among Commercial Sex Worker." Nippon Koshu Eisei Zasshi **46**(1): 61-70: Prevention; Epidemiological Research; Prevalence; Direct Sex-Workers; Sexually Transmitted Diseases.
- Ohshige, K., S. Morio, et al. (2000). "Cross-Sectional Study on Risk Factors of HIV Among Female Commercial Sex Workers in Cambodia." Epidemiol Infect **124**(1): 143-52: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Socio-behavioral Research; KAP; Direct Sex-Workers.
- Ohshige, K., S. Morio, et al. (2000). "Behavioural and Serological Human Immunodeficiency Virus Risk Factors Among Female Commercial Sex workers in Cambodia." Int J Epidemiol **29**(2): 344-54: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Direct Sex-Workers; Indirect sex workers; Socio-behavioral Research; KAP.
- Ryan, C. A., O. V. Vathiny, et al. (1998). "Explosive spread of HIV-1 and sexually transmitted diseases in Cambodia." Lancet **351**(9110): 1175: Prevention; Epidemiological Research; Sexually Transmitted Diseases; Police and Armed Forces; Direct Sex-Workers.
- Samnang, P., H. B. Leng, et al. (2004). "HIV prevalence and risk factors among fishermen in Sihanouk Ville, Cambodia." Int J STD AIDS **15**(7): 479-83: Prevention; Epidemiological Research; Male Sexuality.
- Sano, P., S. Sopheap, et al. (2004). "An evaluation of sexually transmitted infection case management in health facilities in 4 border provinces of Cambodia." Sex Transm Dis **31**(12): 713-8: Prevention; Epidemiological Research; Sexually Transmitted Diseases; response Analysis.
- Saphonn, V., H. Sopheab, et al. (2004). "Current HIV/AIDS/STI Epidemic: Intervention Programs in Cambodia, 1993-2003." AIDS Educ Prev **16**(3 Suppl A): 64-77: Prevention; Epidemiological Research; Prevalence; Direct Sex-Workers; Sexually Transmitted Diseases; Response Analysis.
- Soda, K., S. Morio, et al. (1997). "The HIV/AIDS Epidemic in Cambodia." Nippon Koshu Eisei Zasshi **44**(5): 411-418: Prevention; Epidemiological Research; Prevalence; Direct Sex-Workers; Blood Donors.
- Sopheab, H., M. Phalkun, et al. (2004). Integrated HIV, STD, and behavioral survey among male sentinel groups, Banteay Meachey province, Cambodia, 2003. The XV International AIDS Conference, Bangkok:



Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Police and Armed Forces.

Theng, T., P. Sok, et al. (2004). "HIV-1 cord-blood seroprevalence of parturient women in Sihanoukville, Cambodia." Int J STD AIDS **15**(6): 419-21: Prevention; Epidemiological Research; PMTCT.

Thuring, E. G., H. I. Joller-Jemelka, et al. (1993). "Prevalence of markers of hepatitis viruses A, B, C and of HIV in healthy individuals and patients of a Cambodian province." Southeast Asian J Trop Med Public Health **24**(2): 239-49: Prevention; Epidemiological Research; Sexually Transmitted Diseases.

### **2.3. HIV Incidence**

Saphonn, V., B. S. Parekh, et al. (2005). "Trends of HIV-1 Seroincidence Among HIV-1 Sentinel Surveillance Groups in Cambodia, 1999–2002." Journal of Acquired Immune Deficiency Syndromes **39**(5): 6: Prevention; Epidemiological Research; Incidence; Direct Sex-Workers; Indirect Sex-Workers; Police and Armed Forces.

Kruy, S. L., P. Glaziou, et al. (2001). "[Incidence of HIV infection in consultants reviewed after a first negative test in an anonymous and free screening center at the Institut Pasteur of Cambodia, 1996-1999]." Bull Soc Pathol Exot **94**(5): 415-7: Prevention; Epidemiological Research; Incidence.

### **2.4. Additional Epidemiological Research**

Cohen, J. (2003). "Cambodia: Can a Drug Provide Some Protection?" Science **301**(5640): 1660-1: Prevention; Epidemiological Research

Mills, E., S. Singh, et al. (2005). "The HIV/AIDS Epidemic in Cambodia." Lancet Infect Dis **5**(10): 596-7: Prevention; Epidemiological Research; Cross-cutting Research.

## **3. Socio-behavioral Research**

### **3.1. Behavior Change**

BBC World Service Trust (2006). Cambodian Endline Results: HIV and AIDS Knowledge, Attitudes and Practice Trend and Impact of BBC World Service Trust Intervention. Phnom Penh: 68: Prevention; Socio-behavioral Research; Behavior Change; General population; Evaluation.

BBC World Service Trust (2006). Radio Call-in Programmes Qualitative Research Report. Phnom Penh, Institute for the Development of Social

- Sciences in Cambodia: 30: Prevention; Socio-behavioral Research; Behavior Change; KAP; General population.
- Busza, J. and S. Baker (2004). "Protection and Participation: An Interactive Programme Introducing the Female Condom to Migrant Sex Workers in Cambodia." AIDS Care 16(4): 507-18: Prevention; Socio-behavioral Research; Behavior Change; Mobile Populations; Direct Sex-Workers; Condom-use.
- Busza, J. and B. Schunter (2001). "From Competition to Community: Participatory Learning and Action Among Young, Debt-Bonded Vietnamese Sex-Workers in Cambodia." Reproductive Health Matters 9(17): 72-81: Prevention; Socio-behavioral Research; Behavior Change; Mobile Populations.
- CARE and USAID (2005). Sewing a Healthy Future II. A Mid-Term Evaluation The Sewing a Healthy Future Project. Coverage and Behaviour Changes Outcomes in Intervention and Non-Intervention Factories. Phnom Penh: 34: Prevention; Socio-behavioral Research; Behavior Change; General Population; Sexually Transmitted Diseases; Evaluation.
- Chiv, L., K. Narith, et al. (2006). Use of Celebrity: Mechanism of Effectiveness in Cambodian HIV/AIDS TV Spot Promoting Condoms. XVI International AIDS Conference, Toronto: Prevention; Socio-behavioral Research; Behavior Change; Condom-use.
- Keane, V., G. Hammond, et al. (2005). "Quantitative Evaluation of Counseling Associated with HIV testing." Southeast Asian J Trop Med Public Health 36(1): 228-32: Prevention; Socio-behavioral Research; Behavior Change.
- Klinker, C. (2005). Selling Beer Safely: A Cambodian Women's Health Initiative Endline Evaluation February 2005. Phnom Penh
- CARE Cambodia: 39: Prevention; Socio-behavioral Research; Behavior Change; Indirect sex workers; Evaluation.
- Lan, V. S., V. Ouk, et al. (2006). Cost Effectiveness of the 100% Condom Use Programme (CUP) in Cambodia. XVI International AIDS Conference, Toronto: Prevention; Socio-behavioral Research; Behavior Change; Direct Sex-Workers; Condom-use.
- Leng, H. B., G. Dallabetta, et al. (2000). Cambodia: STD and HIV Prevention and Control Efforts. Phase-Specific Strategies for the Prevention, Control and Elimination of Sexually Transmitted Disease: Implications for Research, Policies and Programs. , Rome, Italy: Prevention; Socio-behavioral

Research; Behavior Change; Direct Sex-Workers; Sexually Transmitted Diseases; Response Analysis

- Lowe, D. (2003). Perception of the Cambodian 100% Condom Use Program. Documenting the Experiences of Sex Workers. Phnom Penh, Policy Project: Prevention; Socio-behavioral Research; Behavior Change; Direct Sex-Workers; Indirect sex workers; Condom-use.
- Ministry of Education, Y. a. S. (2000 or 2002). Report on the Evaluation of Strengthening HIV/AIDS/STDs Prevention Education for Secondary Schools in Cambodia Project. Phnom Penh: Prevention; Socio-behavioral Research; Behavior Change; Youth; Evaluation.
- PSI (2003). Knowledge, Attitudes and Behavior Regarding HIV/AIDS in Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; General population; Condom-use.
- PSI (2004). Punishment of Love: Studying the Impact of an Enter-Educational Soap Opera for HIV/AIDS Prevention in Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; Behavior Change; General Population; youth; Condom-use.
- RHAC (2005). HIV/AIDS for Vulnerable Group Program. Phnom Penh: 53: Prevention; Socio-behavioral Research; Behavior Change; Indirect sex workers; Evaluation.
- RHAC (2006). Evaluation Report of Outreach and Health Center Support Program. Phnom Penh: 66: Prevention; Socio-behavioral Research; Behavior Change; Youth; Evaluation.
- RHAC (2006). Knowledge and Behavior of Young People on STI, Family Planning and HIV/AIDS. Phnom Penh: 43: Prevention; Socio-behavioral Research; Behavior Change; Youth; Evaluation.
- Rojanapithayakorn, W. (2006). "The 100% Condom Use Programme in Asia." Reprod Health Matters **14**(28): 41-52: Prevention; Socio-behavioral Research; Behavior Change; Direct Sex-Workers; Condom-use.
- Salgado, A. M., F. Rocha, et al. (2004). Voluntary Counseling and Testing in Action: Expanded Training Maximizes Client Intervention. The XV International AIDS Conference, Bangkok: Prevention; Socio-behavioral Research; Behavior Change; HIV Testing.
- Tharith, T., T. Sokhey, et al. (2004). Evaluation of HIV/AIDS Peer Education Prevention Program Among the Military in Military Region 2 Phnom Penh, Ministry of National Defense & Family Health International: 27: Prevention;

Socio-behavioral Research; Behavior Change; Police and Armed Forces; Evaluation.

UNFPA (2002). Torn Between Tradition and Desire: Young People in Cambodia Today. Phnom Penh: Prevention; Socio-behavioral Research; Behavior Change; Youth.

Vantha, R. (2006). Young Males Play an Important role in Determining the Future of Cambodia's HIV/AIDS Epidemic. XVI International AIDS Conference, Toronto: Prevention; Socio-behavioral Research; Behavior Change; Youth; Male Sexuality; Evaluation.

### **3.2. Knowledge, Attitudes and Practices**

#### **- Drug Users**

KHANA (2006). Compounding Vulnerabilities: Results of the Participatory Assessment and Response on Drugs & Substance Use and HIV in Phnom Penh, Battambang, Siem Reap, and Sihanoukville. Phnom Penh: 20: Prevention; Socio-behavioral Research; KAP; Drug users; Youth.

O'Connell, K., J. J. Neal, et al. (2005). International Rapid Assessment Response and Evaluation: HIV Vulnerability among Drug Users in Phnom Penh, Cambodia. Seventh International Congress on AIDS in Asia and the Pacific, Kobe, Japan: Prevention; Socio-behavioral Research; KAP; Drug Users.

O'Connell, K. A., J. J. Neal, et al. (2005). International Rapid Assessment Response and Evaluation (I-Rare): High Risk Injection Practices among Drug Users in Cambodia. Seventh International Congress on AIDS in Asia and the Pacific, Kobe, Japan: Prevention; Socio-behavioral Research; KAP; Drug Users.

#### **- General Population**

BBC World Service Trust (2006). Radio Call-in Programmes Qualitative Research Report. Phnom Penh, Institute for the Development of Social Sciences in Cambodia: 30: Prevention; Socio-behavioral Research; Behavior Change; KAP; General population.

Cambodian Red Cross and Australian Red Cross (1997). Sexual Knowledge, Attitudes and Behavior in Cambodia and the Threat of Sexually Transmitted Diseases. A Report on the Results of an HIV/AIDS/STDs Survey Conducted in Phnom Penh and in Selected Rural and Coastal Areas of Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; General Population; Youth.

CARE (1999). Sewing a Better Future? A Report on Discussion With Young Garment Factory Workers About Life, Work And Sexual Health. Phnom Penh: Prevention; Socio-behavioral Research; KAP; General Population; Youth; Condom-use.

PSI (2003). Knowledge, Attitudes and Behavior Regarding HIV/AIDS in Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; General population; Condom-use.

Vong, S., J. F. Perz, et al. (2005). "Rapid assessment of injection practices in Cambodia, 2002." BMC Public Health 5(1): 56: Prevention; Socio-behavioral Research; KAP; General Population

Wilkinson, D. (2002). Sex Talk: Peer Ethnographic Research with Male Students and Waitresses in Phnom Penh. Phnom Penh, PSI: Prevention; Socio-behavioral Research; KAP; General Population.

Wilkinson, D. and G. Fletcher (2002). Love, Sex and Condoms in the Time of HIV. Phnom Penh, PSI: Prevention; Socio-behavioral research; KAP; General Population; Condom-use.

#### - Male Sexuality

Cambodian Women's Development Association (1995). Preliminary report: Attitudes to HIV/AIDS and Sex Behavior among Young Males in Phnom Penh, Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Male Sexuality; Youth.

CARE (2000). I'm not Afraid of AIDS, I'm Afraid of no Sex. Work, Life and Sex among Motor Taxi Drivers in Koh Kong, Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Male Sexuality.

CARE and AusAID (2000). Sea and Shore: An Exploration of the Life, Health and Sexuality of Koh Kong's Fishermen Phnom Penh: Prevention; Socio-behavioral Research; KAP; Male Sexuality.

Douthwaite, M. R. and L. Saroun (2006). "Sexual Behaviour and Condom Use Among Unmarried Young Men in Cambodia." AIDS Care 18(5): 505-13: Prevention; Socio-behavioral Research; KAP; Male Sexuality; Condom-use.

Gorbach, P. M., H. Sopheab, et al. (2000). "Sexual Bridging by Cambodian Men : Potential Importance for General Population Spread of STD and HIV Epidemics." Sexually Transmitted Diseases 27(6): 320-326: Prevention;

Socio-behavioral Research; KAP; Male Sexuality; Police and Armed Forces; Sexually Transmitted Diseases; Surveillance

Morio, S., K. Soda, et al. (1999). "Sexual Behaviour of Commercial Sex Worker and Their Clients in Cambodia." J Epidemiol **9**(3): 175-182: Prevention; Socio-behavioral Research; KAP; Direct Sex-Workers; Male Sexuality; Sexually Transmitted Diseases.

PSI (2005). Tracking Results Continuously (TRaC) Survey among Sexually Active Men with Sweethearts (SAMS) in Phnom Penh, Cambodia. Phnom Penh: 41: Prevention; Socio-behavioral Research; KAP; Male Sexuality.

RHAC (2002). Reaching Young Fishermen Project, Focus on STDs HIV/AIDS Sihanoukville, Baseline Survey Report. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Male Sexuality.

Sopheab, H. and S. Vonthanak (2004). Sex Work, Safe Sex and Health Seeking Behaviour toward Sexually Transmitted Infections Among Men in Cambodia. Phnom Penh, NCHADS: Prevention; Socio-behavioral Research; KAP; Male Sexuality.

Soprach, T. (2004). Playing Safe Project. An Assessment of Gang Rape. Phnom Penh, CARE International & Gender and Development for Cambodia 29: Prevention; Socio-behavioral Research; KAP; Male Sexuality.

- Mobile Populations

CARE and USAID (2002). Gambling With One's Health: STI/HIV/AIDS Vulnerability of Casino Workers Along the Thai-Cambodian Border. Phnom Penh: 166: Prevention; Socio-behavioral Research; KAP; Mobile Populations; Sexually Transmitted Diseases.

Crossing Borders Crossing Realities Cambodia (1999). The Vulnerability of Vietnamese Sex Workers in Cambodia,. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Mobile Populations; Direct Sex-Workers; Indirect sex workers; Sexually Transmitted Diseases.

Sopheab, H., K. Fylkesnes, et al. (2006). "HIV-Related Risk Behaviors in Cambodia and Effects of Mobility." Journal of Acquired Immune Deficiency Syndromes **41**(1): 6: Prevention; Socio-behavioral Research; KAP; Mobile Populations.

- Men who have sex with men

Ambrosio, T., P. Catalla, et al. (2001). Out of the Shadows: Male to Male Sexual Behavior in Cambodia. Phnom Penh, KHANA & International HIV/AIDS

Alliance: Prevention; Socio-behavioral Research; KAP; Men who have sex with men.

Catalla, T. A. P., K. Sovanara, et al. (2003). Male-to-Male Sexual Behavior in Cambodia. Phnom Penh, KHANA: 104: Prevention; Socio-behavioral Research; KAP; Men who have sex with men.

Girault, P., T. Saidel, et al. (2004). "HIV, STIs, and Sexual Behaviors among Men who have Sex with Men in Phnom Penh, Cambodia." AIDS Educ Prev 16(1): 31-44: Prevention; Epidemiological Research; Prevalence; Socio-behavioral Research; KAP; Men who have sex with men; Sexually Transmitted Diseases.

Henke, R. and S. Jones (2005). Qualitative Baseline for the Cambodia Program. Phnom Penh, KHANA, Bill & Melinda Gates Foundation, International HIV/AIDS Alliance and Frontiers Prevention Project: Prevention; Socio-behavioral Research; KAP; Men who have sex with men; Direct Sex-Workers; PLHA; Stigmatization; Evaluation; Cross-cutting Research.

Morineau, G., S. Ngak, et al. (2004). Men Who Have Sex with Men in Phnom Penh, Cambodia. Studies Conducted in December 2003 and January 2004. Phnom Penh, Family Health International: 34: Prevention; Socio-behavioral Research; KAP; Men who have sex with men.

Sovannara, K. and C. Ward (2004). Men Who Have Sex with Men in Cambodia: HIV/AIDS Vulnerability, Stigma, and Discrimination. Phnom Penh, Policy: Prevention; Socio-behavioral Research; KAP; Men who have sex with men.

Tan, P. (2005). Ethnography of Male to Male Sexuality in Cambodia. Phnom Penh, UNESCO: Prevention; Socio-behavioral Research; KAP; Men who have sex with men.

#### - Police and armed forces

Gorbach, P. M., H. Sopheab, et al. (2000). "Sexual Bridging by Cambodian Men : Potential Importance for General Population Spread of STD and HIV Epidemics." Sexually Transmitted Diseases 27(6): 320-326: Prevention; Socio-behavioral Research; KAP; Male Sexuality; Police and Armed Forces; Sexually Transmitted Diseases.

Morineau, G., D. Prybylski, et al. (2006). Double Use of Condoms Among Clients of Sex-workers in Cambodia: The Replay of an Old Thai Tale. XVI International AIDS Conference, Toronto: Prevention; Socio-behavioral Research; KAP; Direct Sex-Workers; Police and Armed Forces; Condom-use.

Ramage, I. (2002). Strong Fighting. Sexual Behavior and HIV/AIDS in the Cambodia Uniformed Services. Phnom Penh, Family Health International: 44: Prevention; Socio-behavioral Research; KAP; Police and Armed Forces.

- Direct and indirect Sex-workers

Cambodian Women's Development Association (1995). Knowledge, Attitudes, and Behavior among Commercial Sex Workers in Phnom Penh, Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Direct Sex-workers.

CARE (2005). A Report on the Situation of Beer Promotion Women in the Workplace, Cambodia: 79: Prevention; Socio-behavioral Research; KAP; Indirect Sex-Workers; .

Crossing Borders Crossing Realities Cambodia (1999). The Vulnerability of Vietnamese Sex Workers in Cambodia,. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Mobile Populations; Direct Sex-Workers; Indirect sex-workers; Sexually Transmitted Diseases.

Gorbach, P. M., H. Sopheab, et al. (2006). "Changing behaviors and patterns among Cambodian sex workers: 1997-2003." J Acquir Immune Defic Syndr **42**(2): 242-7: Prevention; Socio-behavioral Research; KAP; Indirect Sex-Workers; Direct Sex-Workers; Condom-use.

Greenwood, Z. and C. Francis (2001). A Good Wife: Discussions with Married Women about Life, Health, Marriage and Sexuality. Phnom Penh, CARE: Prevention; Socio-behavioral Research; KAP; Women.

Henke, R. and S. Jones (2005). Qualitative Baseline for the Cambodia Program. Phnom Penh, KHANA, Bill & Melinda Gates Foundation, International HIV/AIDS Alliance and Frontiers Prevention Project: Prevention; Socio-behavioral Research; KAP; Men who have sex with men; Direct Sex-workers; PLHA; Stigmatization; Evaluation; Cross-cutting Research.

KHANA (2001). Entertainment Workers and HIV/AIDS: An Appraisal of HIV/AIDS Related Work Practices in The Informal Entertainment Sector in Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Indirect Sex-workers.

Legros, P., S. Mam, et al. (2004). "[Prostitution and HIV infection in Cambodia]." Med Trop (Mars) **64**(1): 20: Prevention; KAP; Direct Sex-workers;

Morineau, G., D. Prybylski, et al. (2006). Double Use of Condoms Among Clients of Sex-workers in Cambodia: The Replay of an Old Thai Tale. XVI



- International AIDS Conference, Toronto: Prevention; Socio-behavioral Research; KAP; Direct Sex-Workers; Police and Armed Forces; Condom-use.
- Morio, S., K. Soda, et al. (1999). "Sexual Behaviour of Commercial Sex Worker and Their Clients in Cambodia." J Epidemiol 9(3): 175-182: Prevention; Socio-behavioral Research; KAP; Direct Sex-Workers; Male Sexuality; Sexually Transmitted Diseases.
- NCHADS (2003). Behavioral Sentinel Survey (BBS) V: Sexual Behavior Among Urban Groups, Cambodia 2001. Phnom Penh: 68: Prevention; Socio-behavioral Research; KAP; Direct Sex-workers; Indirect Sex-workers; Condom-use.
- NCHADS (2003). Cambodia 2003 Behavioral Surveillance Survey: HIV/AIDS Related Sexual Behavior Among Urban Sentinel Groups. Phnom Penh: 101: Prevention; Socio-behavioral Research; KAP; Direct Sex-workers; Indirect Sex-workers.
- Ohshige, K., S. Morio, et al. (2000). "Cross-Sectional Study on Risk Factors of HIV Among Female Commercial Sex Workers in Cambodia." Epidemiol Infect 124(1): 143-52: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Socio-behavioral Research; KAP; Direct Sex-Workers.
- Ohshige, K., S. Morio, et al. (2000). "Behavioural and Serological Human Immunodeficiency Virus Risk Factors Among Female Commercial Sex workers in Cambodia." Int J Epidemiol 29(2): 344-54: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Direct Sex-workers; Indirect sex-workers; Socio-behavioral Research; KAP.
- Prybylski, D. and W. Alto (1999). "Knowledge, Attitudes and Practices Concerning HIV/AIDS Among Sex Worker in Phnom Penh, Cambodia." AIDS Care 11(4): 459-472: Prevention; Socio-behavioral Research; KAP; Direct Sex-workers; Condom-use.
- PSI (2004). Knowledge, Attitudes and Behavior Regarding HIV/AIDS in Cambodia: Results of a 2003 National Survey. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Direct Sex-workers.
- PSI (2005). Tracking Results Continuously (TRaC) Survey among Karaoke Women with Sweethearts (KWS) in Phnom Penh and Siem Reap, Cambodia. Phnom Penh: 41: Prevention; Socio-behavioral Research; KAP; Indirect sex-workers.

Quinn, I. (2003). Selling Beer Safely. A Baseline Survey Survey & Needs Assessment of Beer Promoters in Phnom Penh. Phnom Penh, CARE: 56: Prevention; Socio-behavioral Research; KAP; Indirect Sex-Workers.

Sokhom, H., S. Ketya, et al. (2002). Survey on Health Seeking Behaviour of Women Working in the Entertainment Sector in Phnom Penh. Phnom Penh, Center for Advanced Study, Pharmaciens sans Frontieres and Family Health International: 45: Prevention; Socio-behavioral Research; KAP; Indirect sex-workers; Sexually Transmitted Diseases.

Wong, M., I. Lubek, et al. (2003). "Social and Behavioural Factors Associated With Condom Use Among Direct Sex Worker in Siem Reap, Cambodia." Sex Transm Infect **79**(2): 163-165: Prevention; Socio-behavioral Research; KAP; Direct Sex-Workers; Condom-use.

#### - Youth

Alliance Drug Use and HIV Vulnerability (2002). An Appraisal of the Links between Drug Use and HIV Transmission Among Young People in Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Youth.

Cambodian Red Cross and Australian Red Cross (1997). Sexual Knowledge, Attitudes and Behavior in Cambodia and the Threat of Sexually Transmitted Diseases. A Report on the Results of an HIV/AIDS/STDs Survey Conducted in Phnom Penh and in Selected Rural and Coastal Areas of Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; General Population; Youth.

Cambodian Women's Development Association (1995). Preliminary report: Attitudes to HIV/AIDS and Sex Behavior among Young Males in Phnom Penh, Cambodia. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Male Sexuality; Youth.

CARE (1999). Sewing a Better Future? A Report on Discussion With Young Garment Factory Workers About Life, Work And Sexual Health. Phnom Penh: Prevention; Socio-behavioral Research; KAP; General Population; Youth; Condom-use.

Glaziou, P., C. Bodet, et al. (1999). "Knowledge, Attitudes and Practices of University Students Regarding HIV Infection, in Phnom Penh, Cambodia, 1999." Aids **13**(14): 1982-3: Prevention; Socio-behavioral Research; KAP; Youth.

- Guillou, A. (2000). Street Children in Phnom Penh; Informing HIV/AIDS Prevention Strategies. Phnom Penh, FHI-Impact: Prevention; Socio-behavioral Research; KAP; Youth; Condom-use.
- Hoban, E. (2003). The Sexual and reproductive health of Adolescents and Youth in Cambodia: A Survey of Literature and Projects from 1995-2003. Phnom Penh, WHO: 119: Prevention; Socio-behavioral Research; KAP; Youth.
- KHANA (2006). Compounding Vulnerabilities: Results of the Participatory Assessment and Response on Drugs & Substance Use and HIV in Phnom Penh, Battambang, Siem Reap, and Sihanoukville. Phnom Penh: 20: Prevention; Socio-behavioral Research; KAP; Drug users; Youth.
- Ministry of Education, Y. a. S., UNICEF, et al. (2004). Cambodia National Youth Risk Behavior Survey 2004. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Youth.
- National Reproductive Health Program and UNFPA (1999). Reproductive Health in Cambodia: A summary of Research Findings 1990-1998. Phnom Penh: 66: Prevention; Socio-behavioral Research; KAP; Youth; Response Analysis
- RHAC (2001). KAP Survey about Birth Spacing, STIs, HIV/AIDS and Sexual Behavior in 6 Provinces. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Youth.
- RHAC (2002). Adolescent Reproductive Health Project – Out-of-School Youth Phnom Penh. Baseline Survey Report. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Youth; Sexually Transmitted Diseases.
- RHAC (2002). Adolescent Reproductive Health Project, In and Out of School Youth Takeo Province: Baseline Survey Report. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Youth.
- RHAC (2002). Social Campaign for HIV/AIDS 2002: In and Out of School Youth Takeo, Kompong Speu and Battambang Province: Baseline Survey Final Report. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Youth.
- RHAC (without year). Adolescent Reproductive Health Survey, A Baseline Study: Out of School Adolescents in Phnom Penh. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Youth.
- RHAC (without year). Adolescent Reproductive Health Survey, A Baseline Study: School-Going Adolescents in Phnom Penh. Phnom Penh: Prevention; Socio-behavioral Research; KAP; Youth.

Solim, L. (1997). Young People, HIV/AIDS, STDs and Sexual Health Project Survey of Knowledge, Attitudes and Practices. Phnom Penh, Save The Children UK: Prevention; Socio-behavioral Research; KAP; Youth.

Tarr, C. and P. Aggleton (1999). "Young People and HIV in Cambodia: Meanings, Contexts and Sexual Cultures." AIDS Care 11(3): 375-384: Prevention; Socio-behavioral research; KAP; Youth.

### 3.3. Additional Socio-behavioral Research

CARE (2005). Private Sector Partnerships - A Case Study Documenting CARE Cambodia's Partnership with Heineken International 2003 - 2005. Phnom Penh: 44: Prevention; Socio-behavioral Research; Socio-economic Impact;

CWDA (1998). A Research on Trafficking in Women in Cambodia: A Preliminary Report, Phnom Penh. Research on and Action Project on Trafficking in Women in the Mekong Region. Prevention; Socio-behavioral Research; Women

Gesellschaft fuer technische Zusammenarbeit, Global Campaign for Violence Prevention, et al. (2005). Gender Based Violence and HIV/AIDS in Cambodia. Links, Opportunities and Potential Responses. Phnom Penh: 40: Prevention; Socio-behavioral Research; Women.

Steinfatt, T. (2003). Measuring the Number of Trafficked Women and Children in Cambodia: A Direct Observation Field Study, Phnom Penh. USAID. Prevention; Socio-behavioral Research; Women

## **4. Response Analysis**

Abrams, S. (1998). "HIV in Southeast Asia." Harv AIDS Rev: 2-6: Prevention; Cross-cutting Research; Direct Sex-Workers; Drug Users;

Ahmad, K. (2004). "Trial of Antiretroviral for HIV Prevention on Hold." Lancet Infect Dis 4(10): 597: Prevention; Response Analysis.

Burrows, D. and C. Ward (2004). "Policy and Environment Assessment on Illicit Drug Use and HIV Risk in Cambodia." HIV AIDS Policy Law Rev 9(3): 34-5: Prevention; Response Analysis; Drug Users.

Charles, M. (2006). "HIV Epidemic in Cambodia, One of the Poorest countries in Southeast Asia: A Success Story." Expert Rev Anti Infect Ther 4(1): 1-4: Cross-cutting Research; Response Analysis.

- Cohen, J. (2003). "Asia--the next frontier for HIV/AIDS. Two hard-hit countries offer rare success stories: Thailand and Cambodia." Science **301**(5640): 1658-62: Cross-cutting Research.
- Fletcher, G. (2003). Counseling and Testing in Cambodia: An Overview. Phnom Penh, The Policy Project and CARE: Prevention; Response Analysis;
- Gnep, Y. and F. Bourdier (2006). Le Reveil De La Societe Civile: Mobilisations Profanes et Religieuses dans la Lutte Contre le Sida au Cambodge. Phnom Penh: Prevention; Response Analysis;
- Henke, R. and S. Jones (2005). Qualitative Baseline for the Cambodia Program. Phnom Penh, KHANA, Bill & Melinda Gates Foundation, International HIV/AIDS Alliance and Frontiers Prevention Project: Prevention; Socio-behavioral Research; KAP; Men who have sex with men; Direct Sex-workers; PLHA; Stigmatization; Evaluation; Cross-cutting Research.
- Hor, L., C. Vanarith, et al. (2004). How Resource Poor Cambodia Could Stabilize its HIV Epidemic. The XV International AIDS Conference, Bangkok: Prevention; Epidemiological Research; Cross-cutting Research.
- Huff-Rousselle, M. and P. H (2001). "Crossing the Public-Private Sector Divide with Reproductive Health in Cambodia: Out-Patient Services in a Local NGO and the National MCH Clinic." The International Journal of Health Planning and Management(1): 33-46: Prevention; Response Analysis.
- Leng, H. B., G. Dallabetta, et al. (2000). Cambodia: STD and HIV Prevention and Control Efforts. Phase-Specific Strategies for the Prevention, Control and Elimination of Sexually Transmitted Disease: Implications for Research, Policies and Programs. , Rome, Italy: Prevention; Socio-behavioral Research; Behavior Change; Direct Sex-Workers; Sexually Transmitted Diseases; Response Analysis
- Marie Stopes International (2006). HIV Counseling and Testing. A Situation Analysis in Cambodia, Myanmar and Viet Nam. Phnom Penh, Marie Stopes International: 168: Prevention; Response Analysis
- Mielke, J. (1998). "Country watch: Cambodia." Sex Health Exch(2): 10-2: Cross-cutting Research.
- Monchy, D., K. Khy, et al. (2004). "Mise en Place d'un Controle de Qualite de la Sérologie de l'Infection par le VIH. Bilan de 6 Anées de Fonctionnement dans les Centres de Dépistage Anonyme et Gratuit auch Cambodge." Feuillets de Biologie **45**: 71-74: Prevention; Epidemiological Research; Response Analysis.

- Nariddh, M. C. (1994). "Myths about AIDS in Cambodia." Aidscriptions **1**(3): 20-1: Cross-cutting Research.
- NCHADS (2005). Mapping Cambodia's Response to HIV/AIDS. Phnom Penh: Cross-cutting Research; Response Analysis.
- Page-Shafer, K., V. Saphonn, et al. (2005). "HIV Prevention Research in a Resource-limited Setting: The Experience of Planning a Trial in Cambodia." Lancet **366**(9495): 1499-503: Prevention; Clinical Research; Response Analysis.
- Phalla, T., H. B. Leng, et al. (1998). "HIV and STD Epidemiology, Risk Behaviors, and Prevention and Care Response in Cambodia." AIDS **12**: 11-18: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Cross-cutting Research.
- Riess, T. H., K. Lindan, et al. (2004). Integrating Monitoring and Evaluation into HIV Prevention Programs: Experiences from Banteay Meanchey, Cambodia. The XV International AIDS Conference: Prevention; Response Analysis.
- Platt, A., K. Vutheary, et al. (2006). National Aids Authority Operational Research Study on Decentralised Multi-Sectoral Response to HIV/AIDS. Phnom Penh, NAA, UNDP and DFID: 63: Cross-cutting research.
- Sano, P., S. Sopheap, et al. (2004). "An evaluation of sexually transmitted infection case management in health facilities in 4 border provinces of Cambodia." Sex Transm Dis **31**(12): 713-8: Prevention; Epidemiological Research; Sexually Transmitted Diseases; response Analysis.
- Saphonn, V., H. Sopheab, et al. (2004). "Current HIV/AIDS/STI Epidemic: Intervention Programs in Cambodia, 1993-2003." AIDS Educ Prev **16**(3 Suppl A): 64-77: Prevention; Epidemiological Research; Prevalence; Direct Sex-Workers; Sexually Transmitted Diseases; Response Analysis.
- Walston, N. (2005). Cambodia: Family Planning Programs and HIV/AIDS Services. Results of Focus Group Discussions. Phnom Penh, Policy Project: Prevention; Response Analysis; PMTCT.
- Walston, N. (2005). Country Analysis of Family Planning and HIV/AIDS Programs: Cambodia, Policy Project: Prevention; Response Analysis; Socio-economic Impact.

## **II. Care & Treatment**

## **1. Clinical Research**

### 1.1. Basic Science

- Kusagawa, S., H. Sato, et al. (1999). "HIV Type 1 Env Subtype E in Cambodia." AIDS Res Hum Retroviruses **15**(1): 91-4: Care & Treatment; Basic Science.
- Lam, H. Y., J. H. Chen, et al. (2007). "Evaluation of NucliSens EasyQ HIV-1 Assay for Quantification of HIV-1 Subtypes Prevalent in South-East Asia." J Clin Virol **38**(1): 39-43: Care & Treatment; Clinical Research; Basic Science; Viral Load.
- Ly, N. (2006). *Caracterisation Moleculaire du VIH-1 et Premieres Donnees de la Resistance Aux Antiretroviraux au Cambodge*. Bordeaux, Universite de Bordeaux: Care & Treatment; Basic Science.
- Ly, N., P. Recordon-Pinson, et al. (2005). "Characterization of Mutations in HIV Type 1 Isolates from 144 Cambodian Recently Infected patients and Pregnant Women Naive to Antiretroviral Drugs." AIDS Res Hum Retroviruses **21**(11): 971-6: Care & Treatment; Clinical Research; Basic Science.
- Lynen, L., S. Teav, et al. (2006). "Validation of Primary CD4 Gating as an Affordable Strategy for Absolute CD4 Counting in Cambodia." J Acquir Immune Defic Syndr **43**(2): 179-85: Care & Treatment; Clinical Research; Basic Science; CD4 Count.
- Lynen, L., S. Thai, et al. (2006). "The Added Value of a CD4 Count to Identify Patients Eligible for Highly Active Antiretroviral Therapy Among HIV-Positive Adults in Cambodia." J Acquir Immune Defic Syndr **42**(3): 322-4: Care & Treatment; Clinical Research; Basic Science; CD4 Count.
- Pean, P., S. Vong, et al. (2005). "A New Strategy for CD4 T-cell Monitoring of HIV-Positive Patients at Remote Facilities in Cambodia." AIDS **19**(18): 2184-5: Care & Treatment; Clinical Research; Basic Science; CD4 Count.
- Rousset, D., J. L. Soares, et al. (1999). "High Frequency of the 3'A Mutation of the SDF-1 Gene in Cambodia." Aids **13**(3): 420-1: Care & Treatment; Clinical Research; Basic Science.
- Sall, A. A., O. Segeral, et al. (2006). "Immunosuppression and GB Virus C-RNA Detection Among HIV-infected Patients in Cambodia." AIDS **20**(8): 1199-201: Care & Treatment; Clinical Research; Basic Science.

### 1.2. Antiretroviral Treatment

- Chel, S., M. Roeun, et al. (2006). The Role of Peer Support Workers in Adherence Support at the Social Health, Phnom Penh, Cambodia. 18th Annual Australasian Society for HIV Medicine Conference, Melbourne: Care & Treatment; Clinical Research; Antiretroviral Treatment; Socio-behavioral Research.
- Ferradini, L., D. Laureillard, et al. (2005). Positive Outcomes of HAART at 24 Months in HIV infected Patients in Cambodia Care & Treatment; Clinical Research; Antiretroviral Treatment.
- Ferradini, L. and M. d. M. P. Rodriguez (2006). Evaluation à 48 mois d'un traitement antirétroviral chez des patients infectés par le VIH inclus dans la cohorte MSF ARV M24 au Cambodge. Protocole d'Etude de Cohorte Rétrospective. Phnom Penh, Médecins Sans Frontières – France, Pasteur Institute and Epicentre: Care & Treatment; Clinical Research; Antiretroviral Treatment.
- Ferradini, L., O. Segeral, et al. (2007). Efficacy of Kaletra-based Second Line Antiretroviral Treatment in Cambodia CROI, Los Angeles: Care & Treatment; Clinical Research; Antiretroviral Treatment.
- Ferradini, L., L. Som, et al. (2007). Efficacité à un an de traitements antirétroviraux de seconde ligne chez les patients HIV+ dans le programme MSF/MOH de l'hôpital AKS à Phnom Penh, Cambodge. 4e Conférence Francophone VIH/Sida, Paris: Care & Treatment; Clinical Research; Antiretroviral Treatment.
- Laurillard, D., K. K. Lak, et al. (2006). Scaling Up Antiretroviral Therapy for Impoverished HIV-1-infected Patients in Rural Cambodia: Feasibility, Efficacy and Safety. XVI International AIDS Conference: Care & Treatment; Response Analysis; Antiretroviral Treatment.
- Madec, Y., D. Laureillard, et al. (2007). "Response to Highly Active Antiretroviral Therapy Among Severely Immuno-compromised HIV-Infected Patients in Cambodia." AIDS 21: 351–359: Care & Treatment; Clinical Research; Antiretroviral Treatment.
- Myung, P. D., M. F. Brady, et al. (2006). Directly Observed HAART Treatment of HIV-infected Children in Cambodia. XVI International AIDS Conference, Toronto: Care & Treatment; Clinical Research; Pediatric Care; Antiretroviral Treatment.
- Nerrienet, E., C. Hak, et al. (2006). Low Incidence of ARV Resistance Associated Mutations Development After 18 Months of HAART in an HIV Patients



Cohort in Cambodia. XVI International AIDS Conference, Toronto: Care & Treatment; Clinical Research; Antiretroviral Treatment; ART Resistance.

Reynes, J. M. and N. Ly (2002). "Résistance du VIH-1 Aux Antiretroviraux." Revue des Practiciens du Cambodge 6(1): 44-52: Care & Treatment; Clinical Research; Antiretroviral Treatment; ART Resistance.

Toeung, P. D., S. Pouv, et al. (2007). Routine Switch after 6 Months from d4Tto AZT Containing Antiretroviral Therapy, at an Outpatient HIV Clinic in Phnom Penh, Cambodia. 4th International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention, Sydney: Care & Treatment; Clinical Research; Antiretroviral Treatment.

### 1.3. Pediatric Care

Bogomil'skii, M. R., A. G. Rumiantsev, et al. (2002). "[ENT lesions in children with AIDS]." Vestn Otorinolaringol(1): 4-6: Care & Treatment; Clinical Research; Pediatric Care.

Docze, A., G. Benca, et al. (2004). "Is Antimicrobial Multiresistance to Antibiotics in Cambodian HIV-Positive Children Related to Prior Antiretroviral or Tuberculosis Chemotherapy?" Scand J Infect Dis 36(10): 779-80: Care & Treatment; Clinical Research; Pediatric Care.

Doczeova, A., A. Kolenova, et al. (2005). "Antifungal and Antibacterial Resistance Profiles between Cambodia and Kenyan Children with Human Immunodeficiency Virus Infections Receiving Trimethoprim-Sulfamethoxazole Prophylaxis." Pediatr Infect Dis J 24(11): 1029-30: Care & Treatment; Clinical Research; Pediatric Care.

Krcmery, V., A. Augustinova, et al. (2006). "Fungal Resistance in Cambodian Children with Acquired Immunodeficiency Syndrome." Pediatr Infect Dis J 25(5): 470: Care & Treatment; Clinical Research; Pediatric Care; Drug Resistance.

Myung, P. D., M. F. Brady, et al. (2006). Directly Observed HAART Treatment of HIV-infected Children in Cambodia. XVI International AIDS Conference, Toronto: Care & Treatment; Clinical Research; Pediatric Care; Antiretroviral Treatment.

### 1.4. Additional Clinical Research

Chan Sarin et al (2007). Resultat de l'étude ANRS - 1260 Pneumokam. Phnom Penh, Medecines sans Frontieres, ANRS and Cambodian Health Committee: Care & Treatment; Clinical Research; Opportunistic Infections.

- Chandenier, J., K. D. Adou-Bryn, et al. (2004). "In Vitro Activity of Amphotericin B, Fluconazole and Voriconazole Against 162 Cryptococcus Neoformans Isolates from Africa and Cambodia." Eur J Clin Microbiol Infect Dis **23**(6): 506-8: Care & Treatment; Clinical Research; Opportunistic Infections.
- Chel, S., S. Huffam, et al. (2006). The Social Health Clinic: An International Partnership in Phnom Penh, Cambodia: First 15 Months of Operation. XVI International AIDS Conference, Toronto: Care & Treatment; Clinical Research; Response Analysis.
- Hing, K., D. Sculier, et al. (2006). Relation between TB Symptoms and HIV Status in TB Patients at Sihanouk Hospital Center of Hope. Cambodge Santé 2006, Journée de Pneumologie, Phnom Penh: Care & Treatment; Clinical Research; Opportunistic Infections.
- Pappas, G., R. C. Wolf, et al. (2006). "Validity of Measures of Pain and Symptoms in HIV/AIDS Infected Households in Resources Poor Settings: Results from the Dominican Republic and Cambodia." BMC Palliat Care **5**: 3: Care & Treatment; Clinical Research; Opportunistic Infections.
- Ranjbar, S., N. Ly, et al. (2004). "Mycobacterium Tuberculosis Recall Antigens Suppress HIV-1 Replication in Anergic Donor Cells via CD8+ T Cell Expansion and Increased IL-10 Levels." J Immunol **172**(3): 1953-9: Care & Treatment; Clinical Research; Opportunistic Infections.
- Sar, B., S. Boy, et al. (2006). "In Vitro Antifungal-Drug Susceptibilities of Mycelial and Yeast Forms of Penicillium Marneffi Isolates in Cambodia." J Clin Microbiol **44**(11): 4208-4210: Care & Treatment; Clinical Research; Opportunistic Infections.

## **2. Epidemiological Research**

### 2.1. Opportunistic Infections

- (2005). "Screening HIV-infected persons for tuberculosis--Cambodia, January 2004-February 2005." MMWR Morb Mortal Wkly Rep **54**(46): 1177-80: Care & Treatment; Opportunistic Infections; Epidemiological Research.
- (2006). "MMWR report on HIV and TB highlights challenges, needs." AIDS Alert **21**(1): 9-10: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Bailloud, R., M. Sumanak, et al. (2002). "Premier Cas d'Infection a Penicillium Marneffi Identifiés chez l'Immunodéprimé au Cambodge." J Mycol Med **12**:

138-142: Care & Treatment; Epidemiological Research; Opportunistic Infections.

- Bendick, C., C. Scheifele, et al. (2002). "Oral Manifestations in 101 Cambodians with HIV and AIDS." J Oral Pathol Med **31**(1): 1-4: Care & Treatment; Epidemiological Research; Opportunistic Infections
- Bonnet, M. M., L. L. Pinoges, et al. (2006). "Tuberculosis after HAART initiation in HIV-positive Patients from Five Countries with a High Tuberculosis Burden." Aids **20**(9): 1275-9: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Bun Navy, K., S. Prem Prey, et al. (2005). "The First Reported Cases of Disseminated Histoplasmosis in Cambodia, Complicated by Multiple Opportunistic Infections." Southeast Asian J Trop Med Public Health **36**(5): 1272-4: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Chel, S., S. Sarun, et al. (2006). Characteristics and Outcomes of Tuberculosis Treatment in an Outpatient HIV Clinic in Phnom Pen, Cambodia. 18th Annual Australasian Society for HIV Medicine Conference, Melbourne: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Chhin, S., J. I. Harwell, et al. (2006). "Etiology of Chronic Diarrhea in Antiretroviral-Naive Patients with HIV Infection admitted to Norodom Sihanouk Hospital, Phnom Penh, Cambodia." Clin Infect Dis **43**(7): 925-32: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Chhin, S., G. Rozycki, et al. (2004). "Aetiology of meningitis in HIV-infected patients in a referral hospital in Phnom Penh, Cambodia." Int J STD AIDS **15**(1): 48-50: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Ferradini, L., E. Ashley, et al. (2007). A randomised, open non-inferiority study of high-dose oral fluconazole + oral flucytosine versus Amphotericin B + flucytosine for the initial treatment of cryptococcal meningitis in patients with AIDS. Phnom Penh, MSF France, Epicentre, Pasteur Institute et al: Care & Treatment; Epidemiological Research; Opportunistic Infections
- Heller, T., K. Cain, et al. (2006). Tuberculosis as a Late Complication of HIV Infection in Banteay Meanchey, Cambodia. 37th Union World Conference on Lung Health Paris: Care & Treatment; Epidemiological Research; Opportunistic Infections.

- Kimerling, M., Schuchter, J, et al. (2002). "Prevalence of Pulmonary Tuberculosis Among HIV-Infected Persons in a Home Care Program in Phnom Penh, Cambodia." The International Journal of Tuberculosis and Lung Disease **6**(11): 988-994: Care & Treatment; Epidemiological Research; Opportunistic Infections; Drug Resistance.
- Kong, B., J. Harwell, et al. (2007). "Opportunistic Infections and HIV Clinical Disease Stage Among Patients Presenting for Care in Phnom Penh, Cambodia." Southeast Asian Journal of Tropical Medicine and Public Health **38**(1): 7: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Navy, K. B., S. P. Prey, et al. (2005). "The First Reported Cases of Disseminated Histoplasmosis in Cambodia, Complicated by Multiple Opportunistic Infections." Southeast Asian Journal of Tropical Medicine and Public Health **36**(5): 3: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Pichith, K., H. Chanroeun, et al. (2001). "[Clinical aspects of AIDS at the Calmette hospital in Phnom Penh, Kingdom of Cambodia A report on 356 patients hospitalized in the Medicine "B" Department of the Calmette Hospital]." Sante **11**(1): 17-23: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Reichart, P. A., P. Khongkhunthian, et al. (2003). "Oral manifestations in HIV-infected individuals from Thailand and Cambodia." Med Microbiol Immunol **192**(3): 157-60: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Richner, B., D. Laurent, et al. (1997). "Spread of HIV-1 to Children in Cambodia." Lancet **349**(9063): 1451-2: Care & Treatment; Epidemiological Research; Opportunistic Infections; Pediatric Care.
- Sar, B., C. Keo, et al. (2005). Five Years Surveillance in Antifungal Drug Susceptibility of Cryptococcus Neoformans Isolates in Cambodia. 45th Annual ICAAC, Washington: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Sar, B., C. Keo, et al. (2006). Surveillance of Multi-Drug Resistance of Mycobacterium Tuberculosis Isolates in Cambodia. 46th Annual ICAAC, San Francisco: Care & Treatment; Epidemiological Research; Opportunistic Infections; Drug Resistance.
- Schmidt-Westhausen, A. M., C. Bendick, et al. (2004). "Oral candidosis and associated Candida species in HIV-infected Cambodians exposed to

- antimycotics." Mycoses **47**(9-10): 435-41: Care & Treatment; Epidemiological Research; Prevalence; Opportunistic Infections.
- Senya, C., A. Mehta, et al. (2003). "Spectrum of Opportunistic Infections in Hospitalized HIV-Infected Patients in Phnom Penh, Cambodia." International Journal of STD and AIDS **14**(6): 411-416: Care & Treatment; Epidemiological Research; Opportunistic Infections.
- Sok, P., J. I. Harwell, et al. (2006). "Demographic and Clinical Characteristics of HIV-infected Inpatients and Outpatients at a Cambodian Hospital." AIDS Patient Care STDS **20**(5): 369-78: Care & Treatment; Epidemiological Research; Prevalence; Opportunistic Infections.
- Tan, E. M., C. V. Mean, et al. (2006). Innovative Policies and Strategies in Cambodia for Implementing TB/HIV Collaborative Activities Within a Challenging Environment. XVI International AIDS Conference, Toronto: Care & Treatment; Epidemiological Research; Opportunistic Infections.

## 2.2. Additional Epidemiological Research

- L'Her, P., S. L. Kruey, et al. (1994). "[The Human Immunodeficiency Virus Epidemic in Cambodia]." Ann Med Interne (Paris) **145**(3): 200-1: Care & Treatment; Epidemiological Research.

## **3. Socio-behavioral Research**

### 3.1. Nutrition

- Helen Keller International-Cambodia (2005). "Serious Food Insecurity Among People Affected by HIV/AIDS in Cambodia to Be Addressed by Homestead Food Production." Nutrition Bulletin **5**(1): 1-4: Care & Treatment; Socio-behavioral Research; Nutrition; PLHA.
- Thwyn, A. (2006). Food Support to People Living With HIV/AIDS and OVC with Home Based Care. Phnom Penh, KHANA, USAID and WFP: 20: Care & Treatment; Socio-behavioral Research; Nutrition; PLHA

### 3.2. Additional Socio-behavioral Research

- Carter, L., K. Green, et al. (2003). A Hard Road: The Experiences of Mobile Populations in Accessing HIV/AIDS Care and Support Services in Cambodia. Phnom Penh, CARE & USAID: 48: Care & Treatment; Socio-behavioral Research; Mobile Populations; PLHA.

- Chel, S., M. Roeun, et al. (2006). The Role of Peer Support Workers in Adherence Support at the Social Health, Phnom Penh, Cambodia. 18th Annual Australasian Society for HIV Medicine Conference, Melbourne: Care & Treatment; Clinical Research; Antiretroviral Treatment; Socio-behavioral Research.
- Chhan, C., T. H. Riess, et al. (2004). Collaborative Approach to Home-based HIV Prevention and Care in Rural Cambodia. The XV International AIDS Conference, Bangkok: Care & Treatment; Socio-behavioral Research; Home-based Care; PLHA.
- Geurtsen, B. (2005). "Quality of Life and Living with HIV/AIDS in Cambodia." J Transcult Nurs **16**(1): 41-9: Care & Treatment; Socio-behavioral Research; PLHA; Socio-economic Impact.
- KHANA (2001). When You Are Ill, You Always Have Hope: An Exploration of the Role of Traditional Healers in HIV/AIDS Care and Prevention in Cambodia. Phnom Penh, KHANA: Care & Treatment; Socio-behavioral Research.
- Paxton, S. (2005). Steps to Empowerment: Challenges to the Greater Involvement of People Living with HIV in the response to AIDS in Cambodia. Phnom Penh, Policy Project: Care & Treatment; Socio-behavioral Research; PLHA; Response Analysis.

#### **4. Response Analysis**

- Bourdier, F. (2006). Policies and Politics Underlying the Path for Universal Access to Treatment Against AIDS in Cambodia. Phnom Penh, Center for East and South-East Asian Studies & Lund University, Sweden.: 26: Care & Treatment; Response Analysis.
- Chea, R., S. Seng, et al. (2006). Developing Procurement Capability for ARV Drugs in Cambodia. XVI International AIDS Conference, Toronto: Care & Treatment; Response Analysis; Antiretroviral Treatment.
- Chel, S., S. Huffam, et al. (2006). The Social Health Clinic: An International Partnership in Phnom Penh, Cambodia: First 15 Months of Operation. XVI International AIDS Conference, Toronto: Care & Treatment; Clinical Research; Response Analysis.
- Dousset, J.-P. (2003). Baseline Assessment for the Implementation of Continuum of Care for People Living With HIV/AIDS in Sihanoukville Operational District. Phnom Penh: Care & Treatment; PLHA; Response Analysis.

- Fraser, B. (2005). "Getting Drugs to HIV-Infected Children in Cambodia." Lancet **366**(9492): 1153-4: Care & Treatment; Pediatric Care; Response Analysis;
- Laurillard, D., K. K. Lak, et al. (2006). Scaling Up Antiretroviral Therapy for Impoverished HIV-1-infected Patients in Rural Cambodia: Feasibility, Efficacy and Safety. XVI International AIDS Conference: Care & Treatment; Response Analysis; Antiretroviral Treatment.
- Paxton, S. (2005). Steps to Empowerment: Challenges to the Greater Involvement of People Living with HIV in the response to AIDS in Cambodia. Phnom Penh, Policy Project: Care & Treatment; Socio-behavioral Research; PLHA; Response Analysis.
- Pilsczek, F. H. (2001). "Hospital Medicine in Cambodia: A Visiting Doctor's Perspective." Cmaj **165**(1): 37-41: Care & Treatment; Response Analysis.
- Sothy, S., C. Vanarith, et al. (2004). Reducing Hospital Care Burden of HIV/AIDS Patients. The XV International AIDS Conference, Bangkok: Care & Treatment; Response Analysis; PLHA.
- Un, P., S. Thai, et al. (2006). Facilitating Scale-up of HIV-care Through an NGO-hospital Based HIV-training Program for Physicians in Cambodia. XVI International AIDS Conference, Toronto: Care & Treatment; Response Analysis; Antiretroviral Treatment.
- WHO (2006). The Continuum of Care for People Living With HIV/AIDS in Cambodia: Linkages and Strengthening in the Public Health System. Case Study. Phnom Penh: 31: Care & Treatment; Response Analysis.

### **III. Socio-economic Impact**

#### **1. OVCs**

- Alkenbrack, S., T. Chettra, et al. (2004). The Social and Economic Impact of HIV/AIDS on Families with Adolescents and Children in Cambodia. Phnom Penh, Ministry of Social Affairs, Veterans and Youth Rehabilitation; USAID and the POLICY Project: 72: Socio-economic Impact; OVCs; PLHA.
- Knodel, J., Z. Zimmer, et al. (2006). The Impact of AIDS on Older Age Parents in Cambodia. Population Studies Center Research Report 06-594, UNFPA; University of Michigan and Royal University of Phnom Penh: Socio-economic Impact; OVCs.
- NAA and UNICEF (2006). Children and HIV/AIDS in Cambodia. Background

Report. Regional Consultation on Children and HIV/AIDS, Hanoi, Vietnam: Socio-economic Impact; OVCs.

Save the Children Australia (2005). Changing Lives through Participatory Research and Programming. A Report on Child-Led Research into the Effects of HIV/AIDS on Children in Cambodia. Phnom Penh: 44: Socio-economic Impact; OVCs.

Save the Children Australia (2006). Small Also Have Something to Say. A Report on Research into the Effects of HIV/AIDS on Children in Six Asian Countries. Phnom Penh: 56: Socio-economic Impact; OVCs.

Ramage, I., G. Pictet, et al. (2005). Girls and Buddhist Nuns. Research Report. Phnom Penh, Save the Children Australia: 91: Socio-economic Impact; OVCs.

Wijngaarden, J. and S. Shaeffer (2005). The Impact of HIV/AIDS on Children and Young People : Reviewing Research Conducted and Distilling Implications for the Education Sector in Asia : HIV/AIDS & Education. Discussion Paper No. 1. Bangkok, UNESCO: Socio-economic Impact; Youth.

## **2. Macro/Micro Economic Impact**

Asian Development Bank and UNAIDS (2004). Asia-Pacific's Opportunity: Investing To Avert An HIV/AIDS Crisis. Study Series. without place: Socio-economic Impact.

Bunna, S. and C. N. Myers (1999). Estimated Economic Impacts of AIDS in Cambodia. Phnom Penh, UNDP: Socio-economic Impact.

CARE (2005). Private Sector Partnerships - A Case Study Documenting CARE Cambodia's Partnership with Heineken International 2003 - 2005. Phnom Penh: 44: Prevention; Socio-behavioral Research; Socio-economic Impact;

Forsythe, S. (2002). Resource Requirements for Cambodia's 2001-2005 HIV/AIDS National Strategic Plan. Phnom Penh, The Policy Project/Futures Group: Socio-economic Impact.

Geurtsen, B. (2005). "Quality of Life and Living with HIV/AIDS in Cambodia." J Transcult Nurs **16**(1): 41-9: Care & Treatment; Socio-behavioral Research; PLHA; Socio-economic Impact.

Lim, Y., Merrigan, M. (2000). HIV/AIDS and Landlessness Study, Banteay Mean Chey Province, Cambodia, FHI/Impact. The Sixth International



Conference on AIDS in the Asia and the Pacific, Melbourne, Australia, 2001: Socio-economic Impact.

Ministry of Planning (2001). Cambodia Human Development Report. Societal Aspects of the HIV/AIDS Epidemic in Cambodia. Progress Report. Phnom Penh, UNDP: Socio-economic Impact.

NCHADS and NAA (2001). HIV/AIDS in the Kingdom of Cambodia. Background, Projections, Impacts, Interventions. Phnom Penh: Socio-economic Impact.

Walston, N. (2005). Country Analysis of Family Planning and HIV/AIDS Programs: Cambodia, Policy Project: Prevention; Response Analysis; Socio-economic Impact.

Policy Project (2003). HIV/AIDS in the Mekong Region. Current Situation, Future Projections, Socioeconomic Impacts, and Recommendations. Washington: Socio-economic Impact.

### **3. Documenting Best Practice**

Buhler, M., D. Wilkinson, et al. (2006). Turning the Tide. Phnom Penh, UNAIDS: 80: Cross-cutting Research.

Charles, M. (2006). "HIV Epidemic in Cambodia, One of the Poorest countries in Southeast Asia: A Success Story." Expert Rev Anti Infect Ther 4(1): 1-4: Cross-cutting Research; Response Analysis.

Cohen, J. (2003). "Asia--the next frontier for HIV/AIDS. Two hard-hit countries offer rare success stories: Thailand and Cambodia." Science 301(5640): 1658-62: Cross-cutting Research.

Hor, L., C. Vanarith, et al. (2004). How Resource Poor Cambodia Could Stabilize its HIV Epidemic. The XV International AIDS Conference, Bangkok: Prevention; Epidemiological Research; Cross-cutting Research.

L'Her, P., M. Merlin, et al. (1995). "[Cambodia: The Undermining by AIDS or the Difficult Rebuilding of a Destroyed Country]." Med Trop (Mars) 55(1): 21-5: Socio-economic Impact.

NCHADS (2005). Mapping Cambodia's Response to HIV/AIDS. Phnom Penh: Cross-cutting Research; Response Analysis.

UNAIDS (2004). Country Profile: An Overview of the HIV/AIDS/STI Situation and the National Response in Cambodia 5th Edition December 2004. Phnom Penh: Cross-cutting research.

#### **4. Other Research on Socio-economic Impact**

- Cambodian Working Group on HIV/AIDS Infections (2002). Projections for HIV/AIDS in Cambodia 2000-2010. Phnom Penh: 61: Prevention; Epidemiological Research; Socio-economic Impact;
- Millado, M. C. (2003). Intergrating HIV/AIDS Into Community Development. Phnom Penh, JICA and KHANA: Socio-economic Impact; PLHA; Stigmatization.
- Ministry of Health (without year). Report of the Mid-Term Assessment of the Ministry of Health Strategic Plan for HIV/AIDS and STDs Prevention and Care in Cambodia. Phnom Penh: Cross-cutting Research.
- Mielke, J. (1998). "Country watch: Cambodia." Sex Health Exch(2): 10-2: Cross-cutting Research.
- Nariddh, M. C. (1994). "Myths about AIDS in Cambodia." Aidscriptions 1(3): 20-1: Cross-cutting Research.
- Phalla, T., H. B. Leng, et al. (1998). "HIV and STD Epidemiology, Risk Behaviors, and Prevention and Care Response in Cambodia." AIDS 12: 11-18: Prevention; Epidemiological Research; Prevalence; Sexually Transmitted Diseases; Cross-cutting Research.
- Platt, A., K. Vutheary, et al. (2006). National Aids Authority Operational Research Study on Decentralised Multi-Sectoral Response to HIV/AIDS. Phnom Penh, NAA, UNDP and DFID: 63: Cross-cutting research.
- Soeprapto, W., S. Ertono, et al. (1995). "HIV and peacekeeping operations in Cambodia." Lancet 346(8985): 1304-5: Cross-cutting Research.
- van Merode, T., B. C. Dy, et al. (2006). "Antiretrovirals for Employees of Large Companies in Cambodia." Lancet 368(9541): 1065: Socio-economic Impact.
- Ward, C. (2003). "International Guidelines audit tool tested in Cambodia." Can HIV AIDS Policy Law Rev 8(3): 39-41: Cross-cutting Research.